

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CALLAWAY GOLF COMPANY,)	
)	
Plaintiff,)	C.A. No. 06-91 (SLR)
v.)	
)	
ACUSHNET COMPANY,)	JURY TRIAL DEMANDED
)	
Defendant.)	

ACUSHNET COMPANY'S MEMORANDUM IN SUPPORT OF
ITS MOTION TO STAY LITIGATION PENDING
INTER PARTES REEXAMINATION BY THE U.S. PATENT OFFICE

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Acushnet Company (“Acushnet”) requests that this Court stay this recently-filed patent litigation in favor of Acushnet’s earlier-filed and now granted requests for *inter partes* reexamination of all of the patents-in-suit. The United States Patent and Trademark Office (“PTO”) has ordered reexamination of every claim of all the patents-in-suit and that proceeding will resolve many of the issues in this case.

The decision to stay litigation is part of the inherent power of the Court to manage its docket. *Landis v. North Am. Co.*, 299 U.S. 248, 254 (1936); *see also Pegasus Dev. Corp. v. DirectTV, Inc.*, C.A. No. 00-1020-GMS, 2003 U.S. Dist. LEXIS 8052, at *3 (D. Del. May 14, 2003) (citing *Cost Bros., Inc. v. Travelers Indem. Co.*, 760 F.2d 58, 60 (3d Cir. 1985).) In enacting the 1999 changes to the Patent Act creating *inter partes* reexamination, Congress envisioned that *inter partes* proceedings could result in pending litigation being stayed. 35 U.S.C. § 318 (“Stay of Litigation”).

The *inter partes* reexamination procedures were created by Congress to be a cost-effective alternative to litigation in federal court. 145 CONG. REC. E1789-E1790 (Aug. 5, 1999). Under the statute, both Acushnet and Callaway will be bound by the outcome of the *inter partes* reexamination proceedings, relieving the Court of the responsibility of dealing with printed prior art-related invalidity issues. 35 U.S.C. § 315(c).¹

The PTO has determined that Acushnet’s requests raised over 100 substantial new questions of patentability and has ordered reexamination of each of the claims of the patents-in-suit. (See Exs. A-D hereto (orders granting each of Acushnet’s requests for reexamination).) A stay of this litigation is appropriate to permit the PTO to complete its

¹ Section 315(c) states, in pertinent part:

A third-party requester whose request for an *inter partes* reexamination results in an order under section 313 is estopped from asserting at a later time, in any civil action arising in whole or in part under section 1338 of title 28, the invalidity of any claim finally determined to be valid and patentable on any ground which the third-party requester raised or could have raised during the *inter partes* reexamination proceedings.

Congressionally-required task of reexamining patents after concluding prior art raises a substantial new question of patentability. The PTO is required by statute to conduct this reexamination with “special dispatch.” 35 U.S.C. § 314(c).

BACKGROUND

Patent litigation involves four patents on golf ball cover technology and construction. Each of the four patents-in-suit claim a golf ball with an inner cover made of an ionomer resin including 16% or less of an “alpha, beta unsaturated carboxylic acid” and covers that can include thermoplastic or thermosetting materials, such as polyurethane. *See, e.g.*, ‘130 patent, col. 16, line 61-col. 17, line 5 (claiming that an outer cover layer includes “relatively soft polymeric material selected from the group consisting of non-ionomeric thermoplastic or thermosetting materials.”) The soft outer cover layer of the golf ball is intended to give the “click” and “feel” of a balata-covered golf ball.² Not only do these patents claim particular chemical compositions of the cover materials, but they also claim mechanical properties such as “Shore D hardness” and “flexural modulus.”³

² Balata is a “tough, non-elastic rubberlike gum obtained from the sap of the balata [tree].” WEBSTER’S II NEW RIVERSIDE UNIVERSITY DICTIONARY 148 (1988). Balata was historically used as a high-quality golf ball cover because it gave a good “feel” to the ball and allowed advanced players to impart high spin to the ball. However, balata was expensive and was not durable. Hence, much effort was devoted, starting well before the time of these patents, to finding materials that could be an acceptable replacement for balata on golf balls. Polyurethane was identified at least as early as the mid 1970’s as a durable and cost-effective replacement for balata. (Great Britain Patent No. 1 515 196, col. 1, lines 38-44 (Ex. E hereto).) ““Click” is the sound when the ball is hit by a golf club and “feel” is the overall sensation imparted to the golfer when the ball is hit.” (U.S. Patent No. 5,334,673 to Wu at col. 1, lines 36-39 (Ex. F hereto).)

³ Flexural modulus is a ratio of stress to strain when the material being tested is being flexed. ENGINEERED MATERIALS HANDBOOK, VOL. 2 (ENGINEERING PLASTICS) 18 (1988). Shore hardness is a measure of the resistance of a material to indentation. The higher the Shore D number, the greater the resistance to indentation. ENGINEERED MATERIALS HANDBOOK, VOL. 2 at 38. In measuring Shore D hardness, a Shore D durometer is used.

The golf ball art is extremely crowded. In fact, a search for the term “golf ball” conducted on May 4, 2006, in the United States Patent database, which only permits text searching of documents since 1975, returns 9161 issued United States Patents during this time period. There are huge volumes of patents and publications under foreign and international patent systems. The PTO is well-suited to bring its considerable expertise to bear on this large volume of prior art.

On January 17, 2006 Acushnet filed its requests for reexamination of all of the patents-in-suit. Callaway filed this litigation on February 9, 2006. On April 6 and 7, the PTO ordered reexamination of all of the patents-in-suit. (Exs. A-D hereto.)

Callaway has attempted to forestall reexamination of these patents on multiple occasions by filing petitions in the PTO, the most recent petition being filed on April 28, 2006. The first petition was denied by the PTO on April 10. The second and third petitions are still pending before the PTO. In essence, one petition requests that the PTO vacate the four orders for reexamination as being *ultra vires* and the other requests a stay of the reexamination. (Exs. G-H hereto.) Acushnet has opposed both Callaway’s pending petitions. (Exs. I-J hereto (copies of Acushnet’s oppositions with respect to the ‘293 patent; Acushnet filed nearly identical oppositions in connection with each patent-in-suit.) Decisions on Callaway’s petitions by the PTO are forthcoming.

ARGUMENT

STAY OF THIS LITIGATION IS WARRANTED

I. STAYS ARE WITHIN THE DISCRETION OF THE COURT AND CONGRESS ENVISIONED THAT COURTS MIGHT STAY LITIGATION PENDING OUTCOME OF REEXAMINATION

The decision as to whether to grant a stay of litigation pending the PTO’s reexamination of a patent involved in litigation “is firmly within the discretion of the court.” *Pegasus Dev.*, 2003 U.S. Dist. LEXIS 8052, at *3 (citing *Cost Bros.*, 760 F.2d at

60); *see also Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1426-27 (Fed. Cir. 1988); *Landis*, 299 U.S. 248 at 254.

In 1999, when Congress amended the Patent Act to provide third parties the right to submit comments during the reexamination of a patent, Congress also acknowledged that Courts might stay litigation pending the outcome of the administrative review of a patent's validity. 35 U.S.C. § 318. Acushnet requests that this Court exercise its discretion and grant a stay of the present litigation.

II. THE TEST APPLIED BY THIS COURT FAVORS GRANTING A STAY IN THIS CASE

When determining whether to stay a case, courts consider the following factors: (1) whether a stay will simplify the issues and trial of the case; (2) whether discovery is complete and whether a trial date has been set; and (3) "whether a stay would unduly prejudice or present a clear tactical disadvantage to the non-moving party." *See, e.g., Alloc, Inc. v. Unilin Decor N.V.*, C.A. No. 03-253-GMS, 2003 U.S. Dist. LEXIS 11917, *5 (D. Del. July 11, 2003) (citing *inter alia Xerox Corp. v. 3 Comm Corp.*, 69 F. Supp.2d 404, 406 (W.D.N.Y. 1999)). Each of these factors weighs heavily in favor of granting an immediate stay in this case.

A. A Stay of this Case Will Promote Judicial Economy By Simplifying the Issues in Question and Streamlining Trial, if Necessary

The validity of the patents-in-suit is the central issue in this case. In years of mediation and dispute resolution between the parties, validity has always been the central issue. Thus, a primary dispute before this Court concerns the invalidity of the four patents-in-suit. (*See* Acushnet's Ans. To Callaway's Compl. And Demand for Jury Trial at ¶ 49 (Ex. K hereto).) The PTO has recently concluded that there are over 100 substantial new questions of patentability with respect to the patents-in-suit. (Exs. A-D hereto.) Thus, the prior art-based invalidity issues before the PTO during the *inter partes*

reexamination will largely resolve the invalidity issues in this case. By law, Acushnet will be bound by the PTO's conclusions regarding prior art that is presented or could have been presented to the PTO during the *inter partes* reexamination of the patent. 35 U.S.C. § 315(c).

A stay of this litigation pending the outcome of the *inter partes* reexamination of the four patents-in-suit is consistent with Congress' intent in enacting the reexamination statute. The CAFC has recognized that "[o]ne purpose of the reexamination procedure is to ... facilitate trial of that issue by providing the district court with the expert view of the PTO (when a claim survives the reexamination proceeding)." *Gould v. Control Laser Corp.*, 705 F.2d 1340, 1342 (Fed. Cir. 1983). Reexamination thus brings the PTO's expertise to bear on the validity of patents involved in litigation. *See Ingro v. Tyco Indus., Inc.*, 227 U.S.P.Q. (BNA) 69, 71 (N.D. Ill. 1985) (quoting *Patlex v. Mossinghoff*, 758 F.2d 594, 602 (Fed. Cir. 1985)). The patents-in-suit are in a crowded field of art, thus making the PTO's expertise even more relevant.

Now that the PTO has granted each of Acushnet's requests for *inter partes* reexamination, the PTO will consider the patentability of each claim of the patents-in-suit in light of the prior art applied against the claims in the reexamination request. If the Court grants the present motion to stay, then the PTO will likely resolve all of Acushnet's prior art-based invalidity defenses, either by declaring the patent claims to be unpatentable and canceling them, confirming one or more of the patent claims, or by allowing the claims following amendments to the claims. 35 U.S.C. § 316(a). As evidence of the complicated nature of Acushnet's invalidity challenges to the patents-in-suit, the PTO recently concluded that Acushnet's four requests for reexamination rose over 100 substantial new questions of patentability. If the claims are cancelled or confirmed as is, both parties may be relieved of the necessity of obtaining expert reports or present factual evidence on complicated prior art now before the PTO. A stay will preserve resources of the parties and reduce expenses, as intended by Congress. 145

CONG. REC. E1789-E1790 (Aug. 5, 1999) (stating that the *inter partes* reexamination statute “is intended to reduce expensive patent litigation.”)

By granting a stay and allowing the PTO to resolve these validity issues, judicial economy will be promoted by eliminating the prior art validity issues and thus streamlining trial or even spurring a settlement of this litigation. *Emhart Indus., Inc. v. Sankyo Seiki Mfg. Co.*, 3 U.S.P.Q.2d (BNA) 1889, 1890 (N.D. Ill. 1987) (giving seven reasons why reexamination can benefit the Court and the parties including possible settlement, dismissal of the suit, and reduction in the complexity and length of the trial.) As recognized by a court in this District:

[T]he court will also benefit from the reexamination process in that (1) many discovery issues relating to prior art may be alleviated; (2) the record of the reexamination likely would be entered at trial; (3) the issues, defenses, and evidence will be more easily limited in pre-trial conferences following a reexamination; and (4) the outcome of the reexamination process may encourage a settlement without further involvement of the court.”

Alloc, Inc., 2003 U.S. Dist. LEXIS 11917, at *7; *see also Softview Computer Products, Corp. v. Ergo View Technologies Corp.*, 56 U.S.P.Q.2d 1633, 1635 (S.D.N.Y. 2000). Moreover, given the extensive prosecution history and the numerous prior art references deemed by the PTO to raise substantial new questions of patentability, this Court would benefit from “an additional layer of review by the PTO before expending further judicial resources” in this litigation. *Pegasus Dev.*, 2003 U.S. Dist. LEXIS 8052 at *6.

If claims in dispute are amended and issued during the course of the *inter partes* reexamination the scope of any damages may also be transformed since, by law, damages must be limited to the period after allowance of the claim in amended form. *See* 35 U.S.C. § 316(b); *Bloom Eng'g Co. Inc. v. N. Am. Mfg. Co., Inc.*, 129 F.3d 1247, 149-50 (Fed. Cir. 1997). Thus, each of the numerous claims of the patents-in-suit may become “moving targets” during the reexamination process, and both parties would therefore

have to adjust their cases on validity and infringement accordingly. Again, judicial economy is fostered by allowing the PTO to decide whether, and in what form, any claim of the patents-in-suit is patentable.

Thus, granting a stay to allow the PTO to conclude the *inter partes* reexamination would lead to substantial efficiencies and permit the PTO to assess the validity of each of the patents-in-suit and they are required to do so with “special dispatch.” 35 U.S.C. § 314(c).

B. This Case is in its Earliest Stages.

Acushnet’s requests for reexamination of each of Callaway’s patents-in-suit was filed prior to Callaway’s filing of this litigation. This case is in its earliest stages. Discovery has not begun and a case schedule has not been entered. Neither party has incurred the substantial expense of conducting document production, taking depositions, or obtaining expert reports. This case should be stayed to preserve both the parties’ and this Court’s resources. *See Rohm & Haas*, C.A. No. 90-109-SLR, 1992 U.S. Dist. LEXIS 3252, * 9 (D. Del. Mar. 11, 1992) (concluding that although the case had been pending on the Court’s docket for over a year, “the proceedings have not advanced too far to preclude a stay, especially considering that trial is scheduled to commence in over seven months, no pretrial order is in place, nor has the Court decided any dispositive motions on the merits.”); *Pegasus Dev.*, 2003 U.S. Dist. LEXIS 8052, at *6-7.

C. A Stay Will Not Prejudice Plaintiffs, Or Result in Their Tactical Disadvantage.

By statute, *inter partes* reexamination proceedings are conducted with “special dispatch” within the PTO. 35 U.S.C. § 314(c). Therefore, any delay due to the reexamination proceedings should be minimal and reexamination of each of the patents-in-suit has already begun.

As set forth above, both parties will benefit from the PTO's expertise. This *inter partes* reexamination proceeding will provide the parties with further clarification on (1) the validity of the claims; (2) the meaning of certain claim terms that may otherwise be in dispute; and (3) the strength of Acushnet's inequitable conduct defenses. There is no question that the PTO's insight on these issues will assist both parties should resolution of this matter require the Court's assistance following reexamination. *See Rohm & Haas*, 1992 U.S. Dist. LEXIS 3252, at *4 (noting that "the legislative history [of the *ex parte* reexamination statute] suggests the reexamination procedure was created to "provide the federal courts with the expertise of the PTO.")

Plaintiff's own actions are contrary to an assertion of prejudice. The allegedly infringing golf balls have been publicly available since October 2000. (Callaway's Compl. at ¶ 19.) Spalding made a decision not to sue Acushnet on these patents and then sold them to Callaway. Callaway has owned the patents-in-suit since 2003 and has waited over two years before filing the present action against Acushnet. (*Id.* at ¶ 10.) Neither Callaway nor its predecessors-in-interest have acted with any urgency in obtaining a judicial resolution in this matter. Any prejudice that Plaintiff may suffer is *de minimis* in light of the numerous benefits and efficiencies provided by the *inter partes* reexamination of each of the claims of the patents-in-suit.

III. CALLAWAY'S PETITIONS IN THE PTO ARE ATTEMPTS TO FORESTALL REEXAMINATION

As mentioned above, Callaway has filed three petitions in the PTO requesting the PTO to either stay or vacate the reexamination proceedings. (*See* Exs. G-H hereto.) Acushnet has opposed each of Callaway's petitions. (Exs. I-J hereto.) Callaway's first-filed petition has been denied, while the parties await decisions on the other two petitions.

In its petition filed on April 13, 2006, Callaway has contended that Acushnet's requests for reexamination are contrary to a 1996 Settlement Agreement between Acushnet and Spalding. Callaway's interpretation of the Agreement is incorrect.

In September 2003, Callaway purchased hundreds of patents and pending patent applications out of the bankruptcy estate of Spalding. It was not apparent that a 1996 Settlement Agreement (“the Agreement”) between Acushnet and Spalding was to govern any disputes between Acushnet and Callaway. (Ex. L hereto.)

Consistent with the Agreement, the parties had a mediation before David W. Plant in Boston on August 3, 2005. That mediation was unable to resolve the dispute. A few months after that mediation, the parties met again to discuss a resolution of this dispute. This second mediation was before the Honorable Mary Pat Thyng and occurred on October 28, 2005. At the request of Magistrate Judge Thyng, the parties further discussed settlement. On January 4 and 5, 2006, as part on those discussions, Acushnet proposed a settlement where the amount of payment would turn on the validity of the patents-in-suit as determined during an *inter partes* reexamination procedure. Callaway appeared interested and even proposed reexamination of an Acushnet patent. Despite Callaway’s apparent interest, Callaway ultimately rejected Acushnet’s settlement proposal.

On January 17, 2006, Mr. Steve McCracken, General Counsel for Callaway, contacted Mr. Joseph Nauman, Executive Vice President, Corporate and Legal at Acushnet, to inform him that Callaway would file suit the next day.⁴ Having already prepared its requests for reexamination, Acushnet filed them that day. On January 18, at Acushnet’s request, Callaway agreed to meet again with Magistrate Judge Thyng prior to Callaway’s filing of suit. That meeting occurred on February 8, 2006. The parties again were unable to resolve the dispute and the next day, Callaway filed this suit.

The Agreement includes two parts that may be of some relevance to this litigation: (1) a dispute resolution clause; and (2) a forum selection clause in the event of

⁴ It was not until after Acushnet filed its requests for reexamination of the patents-in-suit that Callaway agreed to meet with Magistrate Judge Thyng again.

litigation. The dispute resolution portion of the agreement requires that the parties first conduct a non-binding mediation. (Ex. L ¶ 19.5 hereto.) In the event that the first non-binding mediation does not resolve the dispute, the parties were to refer the dispute to Magistrate Judge Thyng. (Ex. L, ¶ 19.6 hereto.) The parties complied with these provisions.

Pursuant to the forum selection clause, which requires that “either party may initiate legal proceedings but only in the United States District Court for the District of Delaware, and no other,” Callaway filed suit against Acushnet in this Court. (Ex. L, ¶ 19.7 hereto.) Thus, the parties have complied with the relevant portions of the Agreement and Callaway’s argument to the contrary is simply incorrect.

Callaway will likely assert that Acushnet’s requests for reexamination did not comply with the forum selection clause of the Agreement. Callaway’s argument is wrong and ignores the differences between agency review of a patent and litigation in federal court.

Reexamination is an administrative proceeding where the PTO takes a second look at a patent. The proceedings are similar to an original patent Examination before the PTO and the parties to the proceedings are the PTO and the Patent Owner. *See, e.g.*, 35 U.S.C. §§ 312 (“the *Director* shall determine whether a substantial new questions of patentability ... is raised by the request.”); 313 (“If ... *the Director* finds that a substantial new question of patentability affecting a claim of a patent is raised, the determination shall include an order for inter partes reexamination of the patent for resolution of the question”); 314(a) (“reexamination shall be conducted *according to the procedure established for initial examination* under the provisions of sections 132 and 133.”). The primary difference between *ex parte* reexamination and *inter partes* reexamination is that the Third Party Requester will be permitted to file one reply to a PTO Action and the Patent Owner’s reply. *See* 35 U.S.C. § 314(b)(2).

The United States Court of Appeals for the Federal Circuit has distinguished between “administrative proceedings” in the PTO and “legal proceedings” in Federal Court. *See Joy Mfg. Co. v. Nat’l Mine Service Co.*, 810 F.2d 1127, 1130 (Fed. Cir. 1987) (stating that “the district court correctly refused to equate “a *request for administrative reexamination* ... with filing a suit in a United States Court.” (emphasis added).); *Joy Techs., Inc. v. Manbeck*, 959 F.2d 226, 229 (Fed. Cir. 1992) (noting that a reexamination is an “administrative proceeding,” and that there was “no basis” for the plaintiff “to recharacterize the statutory procedure established by Congress in the reexamination statute” to be akin to litigation brought in the Federal Courts.) Moreover, reexamination, an “administrative proceeding,” cannot be filed in United States District Court—either by the Third Party Requester or by the PTO itself. *See Joy Techs.*, 959 F.2d at 229 (noting that the plaintiff admitted that the PTO could not bring a declaratory judgment action for patent invalidity in district court.)

In the *Joy Manufacturing* case, the patent owner had filed a motion to enforce a settlement agreement before a District Court. *Joy Mfg.*, 810 F.2d 1127. The patent owner argued that by filing an *ex parte* reexamination request in the PTO, the licensee had violated a settlement agreement.⁵ *Id.* at 1128. The patent owner requested an injunction preventing the third party requester from “further proceeding in the reexamination procedures in the PTO; to withdraw its reexamination requests’ and to retrieve all documents from the PTO.” *Id.* The Court of Appeals for the Federal Circuit concluded that “[t]he settlement agreement by its literal terms [did] not proscribe the conduct of which” the patent owner complained. *Id.* at 1129. Further, in denying the patent owner’s motion, the Federal Circuit stated:

⁵ The agreement in that case stated in pertinent part: “(a) During the term of this Agreement, NATIONAL will not file any suit in any United States Court or any Court in any foreign country challenging or contesting the validity of the Licensed Patents....” *Joy Mfg.*, 810 F.2d at 1129.

Turning to “patent law,” the district court correctly refused to equate “a request for administrative reexamination ... with filing a suit in a United States Court. Its reliance on *Etter* as support for this legal conclusion was entirely appropriate. The *Etter* decision turned on the precise issue here, namely that reexamination and civil litigation were distinctly different proceedings.

Joy Mfg., 810 F.2d at 1130 (quoting *In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985) (“The intent that reexamination proceedings and court actions involving challenges to validity be distinct and independent is reflected in the legislative history of § 303.”))

The Agreement states that any “legal proceeding” is to be brought in the United States District Court for the District of Delaware. (Agreement, ¶ 19.7.) This clause should not be construed to cover “administrative proceedings,” which are substantially different than “legal proceedings,” as recognized by the Federal Circuit in *Joy Mfg.* and *Etter*. See also *Joy Techs., Inc. v. Manbeck*, 959 F.2d at 229. Reexamination is not between parties to the agreement, cannot be brought in Federal Court and is not precluded by paragraph 19.7 of the Agreement. See *Joy Mfg. Co.*, 810 F.2d at 1130; *Joy Techs.*, 959 F.2d at 229. Such administrative proceedings are outside the Agreement and are not prohibited by the forum selection clause in paragraph 19.7. Moreover, reading the Agreement as expansively as Callaway seems to be raises serious public policy concerns regarding the validity of the Agreement, such as those spelled out in *Lear v. Adkins*. *Lear v. Adkins*, 395 U.S. 653, 670 (1969) (recognizing that licensees must be permitted to challenge the validity of a patent, otherwise “the public may continually need to be required to pay tribute to would-be monopolists without need or justification.”)

Therefore, Callaway’s arguments that the PTO lacks the authority to conduct the *inter partes* reexamination of its patents are misplaced.

CONCLUSION

For the foregoing reasons, Acushnet respectfully requests this Court grant its Motion to Stay Litigation Pending *Inter Partes* Reexamination by the U.S. Patent Office.

Respectfully submitted,

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CERTIFICATE OF SERVICE

I, David E. Moore, hereby certify that on May 5, 2006, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification of such filing(s) to the following and the document is available for viewing and downloading from CM/ECF.

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EXHIBIT A



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
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CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000120	01/17/2006	6210293	

Dorothy P. Whelan
 Fish & Richardson P. C.
 P. O. Box 1022
 Minneapolis MN 55440-1022

EXAMINER

Michael O'Neill

ART UNIT

PAPER

3993

DATE MAILED:

04/07/06

INTER PARTES REEXAMINATION COMMUNICATION

BELOW/ATTACHED YOU WILL FIND A COMMUNICATION FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE OFFICIAL(S) IN CHARGE OF THE PRESENT REEXAMINATION PROCEEDING.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

Howrey LLP
1299 Pennsylvania Avenue N. W.
Washington DC 20004

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,120.

PATENT NUMBER 6,210,293.

TECHNOLOGY CENTER 3900.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

**Transmittal of Communication to
Third Party Requester
Inter Partes Reexamination**

Control No.	Patent Under Re examination	
95/000,120	6210293	
Examiner	Art Unit	
Michael O'Neill	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

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**ORDER GRANTING/DENYING
REQUEST FOR INTER PARTES
REEXAMINATION**

Control No.

95/000,120

Examiner

Michael O'Neill

Patent Under Reexamination

6210293

Art Unit

3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO-1449 or PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☐ An Office action is attached with this order.

☒ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

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DECISION GRANTING INTER PARTES REEXAMINATION

Substantial New Question of Patentability

1. A substantial new question of patentability affecting claims 1-8 of United States Patent Number 6,210,293 to Sullivan is raised by the present request for *inter partes* reexamination.

Extensions of Time

2. Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to “an applicant” and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. § 314(c) requires that *inter partes* reexamination proceedings “will be conducted with special dispatch” (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner’s response is set by statute. 35 U.S.C. § 314(b)(3).

Notification of Concurrent Proceedings

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent 6,210,293 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2686 and 2686.04.

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Requester's Position

4. The request indicates that third party requester considers:
 - a. Claim 1 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt (USPN 4,431,193) alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
 - b. Claim 2 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), or patent owner's admission (Exhibit G at 336).
 - c. Claim 3 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), or patent owner's admission (Exhibit G at 336).
 - d. Claim 4 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.

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- iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
- e. Claim 5 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), and patent owner's admission (Exhibit G at 336).
- f. Claim 6 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), and patent owner's admission (Exhibit G at 336).
- g. Claim 7 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
- h. Claim 8 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.

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- ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), or patent owner's admission (Exhibit G at 336).

Prosecution History of the Sullivan '293 patent

5. United States Patent Number 6,210,293 issued from an application with the serial number of 09/470,196, filed on Dec. 21, 1999. Said application was a continuation of application No. 08/870,585, filed on Jun. 6, 1997, now abandoned, which is a continuation of application No. 08/556,237, filed on Nov. 9, 1995, now abandoned, which is a continuation-in-part of application No. 08/542,793, filed on Oct. 13, 1995, now abandoned, which is a continuation-in-part of application No. 08/070,510, now abandoned.

6. The "continuation" portion of this series of applications can be found on pages 41-42 within the 08/070,510 application where it states that:

Composition D represents the inner layer (i.e. Surlyn 1605) used in U.S. Patent No. 4,431,193. Composition E provides a hard, low acid ionomeric resin [as the inner layer]. The purpose behind producing and testing the balls of Table IV [Table 7] was to provide a subsequent comparison in properties with the multi-layer golf balls of the present invention [which are high acid ionomer resin inner cover layer with lower acid ionomer resin to the known prior art golf balls which are constructed with a low acid ionomer resin inner cover layers of balls D and E].

Molded intermediate Ball D in Table IV (7) is the intermediate ball (the inner layer molded onto a solid core) for the Nesbitt '193 patent. Molded intermediate Ball E in Table IV (7) has as its intermediate ball an ionomer blend of Iotek 7030 and 8000. The '510 application then concludes on page 45:

... it is also noted that the use of the high acid ionomer resins as the inner cover material produces a substantial increase in the finished balls overall distance properties. In this regard, the high acid ionomer resin inner covers of balls 1-3 produce an increase of approximately 10 points in C.O.R. [coefficient of restitution] over the low acid ionomer resin inner covers of balls 4 and about a 25

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points increase over the prior art balls 5. Since an increase in 3 to 6 points in C.O.R. results in an average increase of about 1 yard in distance, such an improvement is deemed to be significant.

It should be noted that the '510 application lacks providing a finished ball using the molded intermediate Ball E constructed of an ionomer blend of Iotek 7030 and 8000. Instead, the '510 application uses only the molded intermediate Ball D which is constructed out of Surlyn 1605 as the finished balls 4 and 5 in Table 8 which are the prior art balls taught in the Nesbitt. Thus, the '510 appears to lack a finished ball embodiment description constructed with an inner layer made from two ionomer blends with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness and an outer layer made of a polyurethane material with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness. Instead, the '510 application discloses only a molded intermediate Ball E made from a 50/50 blend of two ionomers known as Iotek 7030 and 8000 as shown in Table IV (7) on pages 41-42.

7. The next application in the chain where the claimed invention could be adequately describe and enabled is application No. 08/542,793 ('793 application), which is a continuation-in-part to the '510 application. On page 39, the '793 application discloses:

"Top Grade" or "TG" is a low acid inner cover ionomer resin blend comprising 70.6% Iotek 8000, 19.9% Iotek 7010 and 9.6% white masterbatch.

This disclosure describes the claimed inner cover being of two low acid ionomer blends. However, the outer layer is described in the '793 application as consisting of ionomer resins and non-ionomeric thermoplastic elastomers and not polyurethane. Urethanes (polyurethane) include materials from the carbamate group, as well as other functional groups, such as ester, ether, amide and urea. Therefore, the inner layer claimed in the '293 patent is described and enabled on the date of filing of the '793 application which is Oct. 13, 1995, but not the outer layer claimed in the '293 Patent.

8. The next application in the chain where the claimed invention could be adequately described or enabled is application No. 08/556,237 ('237 application), which is a continuation-

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in-part to the '793 application. Page 46 describes a plurality of golf balls constructed of a mantle (core and inner layer) consisting of a blend of ionomers, Iotek 8030 and Iotek 7030, and outer layers consisting of Baytec RE832 which is a castable, thermoset polyurethane material. The claimed invention's outer layer requires the material to be a relatively soft polyurethane material. The material that is described in the disclosure that could meet the relatively soft polyurethane material is found on page 24, Estane X-4517. This material is not described as being used in any embodiment disclosed in the '237 application; although it has been concluded that one of ordinary skill in the art could make a finished golf ball embodiment of this material as an outer layer from reading the disclosure contained within the '237 application. Therefore, the claimed invention in the '293 patent appears adequately described in the '237 application. The '237 application has an filing date of Nov. 9, 1995.

9. Therefore, based on the above analysis regarding the disclosures of the parent applications of which the Sullivan '293 patent claims 35 U.S.C. 120 benefit, the inventions claimed in claims 1-8 of **the Sullivan '293 patent have a critical date for purposes of prior art patents and printed publications of Nov. 9, 1995.**

Substantial New Question vel non

10. The substantial new questions of patentability with respect to Nesbitt for claims 1-8 are based solely on patents and/or printed publications already cited/considered in an earlier concluded examination of the patent being reexamined. On November 2, 2002, Public Law 107-273 was enacted. Title III, Subtitle A, Section 13105, part (a) of the Act revised the reexamination statute by adding the following new last sentence to 35 U.S.C. 303(a) and 312(a):

The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

For any reexamination ordered on or after November 2, 2002, the effective date of the statutory revision, reliance on previously cited/considered art, i.e., "old art," does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based

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exclusively on that old art. Rather, determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis.

In the present instance, there exists a SNQ based solely on Nesbitt (USPN 4,431,193). Nesbitt alone was applied and is now being looked at in a new light. A discussion of the specifics now follows:

RE. CLAIM 1

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

11. It is agreed that the consideration of Nesbitt alone, and Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 1 of the Sullivan patent. As pointed out on pages 14-18 of the request, Nesbitt teaches a two piece golf ball having a solid core with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Nesbitt solely teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

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Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt alone and Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, is considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent. Further, Nesbitt and Molitor '637 taken together are considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

12. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. The request on pages 18 and 19 considers that Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, it should be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in

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Nesbitt teach the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor ‘637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor ‘637 taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor ‘751

13. It is agreed that the consideration of Nesbitt taken with Molitor ‘751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out on pages 20 and 21 of the request, Molitor ‘751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor ‘751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor ‘751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor ‘751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor ‘751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

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4. Proudfit taken with Molitor '637

14. It is further agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 1 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent taken the with analysis of the prosecution history of Proudfit set forth below will lead to the conclusion that the Proudfit patent qualifies as a prior art patent under 35 U.S.C. § 102(b) thus raising a SNQ as to the claims of the Sullivan patent because Proudfit was utilized as a § 102(e) reference in a § 103(a) rejection against the claims in the parent application No. 08/870,585 as evidenced by the acceptance of a Rule 131 declaration withdrawing the Proudfit reference (see Paper #24, mailed 12-7-99), viewing the Proudfit patent as 35 U.S.C. 102(b) prior art that cannot be antedated under 37 CFR 1.131 is a consideration of the teachings in Proudfit in a "new light."

15. Proudfit has a filing date of Jun. 29, 1992 and is a continuation-in-part of Ser. No. 07/733,789, ('789 application) filed on Jul. 26, 1991, now abandoned. A review of the '789 application appears to not adequately describe and enable an invention of a golf ball having a solid core, an inner layer cover and an outer layer cover. Instead, the '789 application appears to describe and enable a golf ball with a solid core and a single cover layer; instead of the inner and outer cover layers shown in Proudfit's figures 1 and 2. Therefore, Proudfit's teachings of a golf ball having a solid core, an inner layer and outer layer has the effective filing date of Jun 29, 1992; the date of filing the Proudfit application which issued into the Proudfit patent. Proudfit issued on May 24, 1994. The claimed inventions within the Sullivan '293 patent have the critical date of Nov. 9, 1995, more than one year after issuance of the Proudfit patent.

16. Thus, it is agreed as stated in the request on pages 22-25 that Proudfit teaches a
three-piece [two-piece] solid golf ball that includes a core, a hard
ionomer inner cover layer and a relatively soft outer cover layer
made of a balata-based material.

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Req. at page 22. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skilled in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22 teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

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Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

17. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor ‘637 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

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5. Proudfit taken with Wu

18. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on page 26, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 26. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be acceptable to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover because it lacks the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

19. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on page 27 and as also discussed

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above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 27. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be accepted to a golfer. As pointed out on pages 27 and 28 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 2

1. Nesbitt

20. It is agreed that consideration of Nesbitt raises a SNQ as to claim 2 of the Sullivan patent. Claim 2 depends from claim 1. Claim 2 further defines the claimed invention to have a diameter of 1.680 inches. As pointed out in the request on pages 29 and 30, Nesbitt teaches that

according to the United States Golf Association Rules, the minimum diameter prescribed for a golf ball is 1.680 inches

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(Nesbitt, col. 2:50-52). This teaching of viewing Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit taken with any one of Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), and patent owner's admission (Exhibit G at 336) taken together

21. It is further agreed that consideration of Proudfit, Molitor '637, Wu, Molitor '751, the USGA Rules of Golf (Exhibit M), and patent owner's admission (Exhibit G at 336) taken together raises a SNQ as to claim 2 of the Sullivan patent. However, the patent owner's admission in Exhibit G and Exhibit M *per se* are not needed to raise a SNQ as to claim 2, because Proudfit, Molitor '637, Wu and Molitor '751 all either expressly or inherently recognize the USGA Rules of Golf in the development of their respective inventions. The USGA requires a golf ball to have a minimum overall diameter of 1.680 inches. Claim 2 depends from claim 1. Claim 2 further defines the claimed invention to have a diameter of 1.680 inches. As pointed out on page 30 of the request, Proudfit teaches a total golf ball diameter of 1.680 inches for a golf ball having a core diameter of 1.500 inches, a inner thickness layer of 0.037 inches (yielding an inner diameter of 1.575 inches) and a outer thickness layer of 0.0525 inches. See Proudfit col. 7:43-47. Molitor '637 teaches in col. 4:60-61 that "all golf balls are 1.680"-1.690" in diameter." Wu teaches in col. 47-49 that

the size of the mold cups is about that of a conventional golf ball mold, i.e. nominally 1.68 inches (4.25 cm) for American sized balls..."

These teachings of viewing Proudfit, Molitor '637, and Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit, Molitor '637, and Wu raises a substantial new

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question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 3

1. Nesbitt

22. It is agreed that consideration of Nesbitt raises a SNQ as to claim 3 of the Sullivan patent. Claim 3 depends directly from claim 1. Claim 3 limits the inner layer to about 0.050 inch thickness and the outer layer to about 0.055 inch thickness. As pointed out in the request on pages 31-32, Nesbitt teaches that a preferred embodiment has an outer layer of 0.0575 inch thickness. If the standard USGA golf ball has an overall minimum diameter of 1.680 inches and Nesbitt in col. 3:29 teaches that a preferred solid core plus inner thickness diameter is 1.565 inches, then Nesbitt inner layer thickness to match the preferred outer layer and solid core diameter in order to yield a total diameter of 1.680 inches would be about 0.0525 inches to be within the given inner layer range of between 0.020 to 0.070 inches. These teachings of viewing Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

2 Proudfit in combination with other references

23. It is **not agreed** that Proudfit in combination with other references teach all of the limitations of claim 3. Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 3 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls

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important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, a reasonable examiner would not consider this teaching important in deciding whether or not the claim is patentable. Thus, Proudfit in combination with the other references does not raise a SNQ with respect to claim 3.

RE. CLAIM 4

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

24. It is agreed that the consideration of Nesbitt alone, and Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 4 of the Sullivan. As pointed out in the request on pages 34-38, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular

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compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

“Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention”.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt alone and Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, is consider to raise a substantial new question that has not been decided in a previous examination on the Sullivan patent. Further Nesbitt and Molitor '637 taken together are considered to raise a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

2 Nesbitt taken with Wu

25. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. The request on pages 38 and 39 considers that Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However,

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a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

26. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 4 of the Sullivan patent. As pointed out on pages 40 and 41 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is

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patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

4 Proudfit taken with Molitor '637

27. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 4 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 42-46 that Proudfit teaches a

“three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.”

Req. at page 42. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a “three-piece” ball. Those skilled in the art understand the term “three-piece ball” to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term “two-piece ball” to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid spherical (see Proudfit's figures) core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 with dimples (again see Proudfit's figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness

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preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

28. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower

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COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a "deadening effect" similar to a balata covered ball.

Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor '637 teaches using a polyurethane material; moreover, a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

29. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. As pointed out in the request on page 46-47, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 26. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this

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Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

30. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 4 of the Sullivan patent. As pointed out in the request on page 48-49 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 48. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 48 and 49 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not

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the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 5

1. Nesbitt

31. It is agreed that consideration of Nesbitt raises a SNQ as to claim 5 of the Sullivan patent. Claim 5 is dependent upon claim 4. Claim 5 limits the inner layer thickness within the range of 0.100 to 0.010 inches thick; the outer layer thickness within the range of 0.010 and 0.070 and the overall ball diameter at least 1.680 inches. As pointed out in the request on pages 50-51, Nesbitt teaches the inner layer thickness being between 0.020 and 0.070 inches (Nesbitt, col. 3:19-23); the outer layer thickness being between 0.020 and 0.100 inches (Nesbitt, col. 3:22-25) and the minimum diameter of 1.680 inches (Nesbitt, col. 2:50-52). These teachings of Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit

32. It is agreed that consideration of Proudfit raises a SNQ as to claim 5 of the Sullivan patent. Claim 5 is dependent upon claim 4. Claim 5 limits the inner layer thickness within the range of 0.100 to 0.010 inches thick; the outer layer thickness within the range of 0.010 and 0.070 and the overall ball diameter at least 1.680 inches. As pointed out in the request on pages 51-52, Proudfit has a preferred embodiment of a multilayer golf ball with an inner layer being 0.037 inches thick; an outer layer being 0.0525 inches thick; and an overall diameter of 1.680 inches. See Proudfit, col. 7:40-47. These teachings of Proudfit were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial

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likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 6

1. Nesbitt

33. It is agreed that consideration of Nesbitt raises a SNQ as to claim 6 of the Sullivan patent. Claim 6 is dependent upon claim 4. Claim 6 limits the inner and outer cover thickness to 0.050 inches and 0.055, respectively. As pointed out in the request on pages 52-53, Nesbitt teaches that a preferred embodiment has an outer layer of 0.0575 inch thickness. If the standard USGA golf ball has an overall minimum diameter of 1.680 inches and Nesbitt in col. 3:29 teaches that a preferred solid core plus inner thickness diameter is 1.565 inches, then Nesbitt inner layer thickness to match the preferred outer layer and solid core diameter in order to yield a total diameter of 1.680 inches would be about 0.0525 inches to be within the given inner layer range of between 0.020 to 0.070 inches. These teachings of viewing Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit

34. It is **not agreed** that Proudfit in combination with other references teach all of the limitation of claim 6. Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 6 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an

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inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, a reasonable examiner would not consider this teaching important in deciding whether or not the claim is patentable. Thus, Proudfit in combination with the other references does not raise a SNQ with respect to claim 6.

RE. CLAIM 7

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

35. It is agreed that the consideration of Nesbitt alone, and consideration of Nesbitt and Molitor '637, each taken together raises a substantial new question of patentability (SNQ) as to claim 7 of the Sullivan. As pointed out in the request on pages 55-59, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, Nesbitt teaches the inner layer is molded over the core to form an intermediate ball, see Nesbitt col. 2:34-37. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in

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col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Molitor '637 lacks teaching the actual flexural modulus of the polyurethane used in covering the solid core. There is a substantial likelihood that review the technical properties of the polyurethane used in Molitor '637 would be needed via product information sheets or the like. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. Viewing the teachings of Nesbitt alone it is clear that these teachings were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Also, the teachings of Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone and Nesbitt and Molitor '637 taken together raise a substantial new

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question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

36. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 7 of the Sullivan patent. The request on pages 59-61 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

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3. Nesbitt taken with Molitor '751

37. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 7 of the Sullivan patent. As pointed out on pages 61 and 62 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, a reasonable examiner would have to review the chemical literature to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

38. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 7 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 63-67 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.

Req. at page 63. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand

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the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 (spherical see figures) and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 (with dimples see figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material.

Although, Proudfit teaches that its soft elastomer material as a flexural modulus in the range of about 20,000 to 25,000 psi, see col. 6:28-31. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the

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COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

39. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. However, Molitor ‘637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. Thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material used in Molitor ‘637. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor ‘637 raises a substantial new

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question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

40. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 7 of the Sullivan patent. As pointed out in the request on pages 68-69, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 68. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

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6. Proudfit taken with Molitor '751

41. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 7 of the Sullivan patent. As pointed out in the request on pages 69-71 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 69. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 69 and 70 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review of the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

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CLAIM 8*1. Nesbitt*

42. It is agreed that consideration of Nesbitt raises a SNQ as to claim 8 of the Sullivan patent. Claim 8 depends from claim 7 and limits the inner layer having a higher Shore D hardness than the outer layer. As pointed out in the request on pages 71-72, Nesbitt teaches a first layer of molded hard, high flexural modulus resinous material under a second layer of soft, low flexural modulus resinous material, see e.g. Nesbitt's abstract. This teaching of Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit

43. It is agreed that consideration of Proudfit raises a SNQ as to claim 8 of the Sullivan patent. Claim 8 depends from claim 7 and limits the inner layer having a higher Shore D hardness than the outer layer. As pointed out in the request on page 72, Proudfit teaches an inner layer formed from hard resin material and an outer layer formed from a soft material. This teaching of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

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Summary of SNQs Adopted and Not Adopted

Requester's SNQs Adopted

44. For Claim 1 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Molitor '751 taken together.
 - (3) Nesbitt and Wu taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751.

45. For Claim 2 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.

46. For Claim 3 of the Sullivan patent:
 - (1) Nesbitt.

47. For Claim 4 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.

48. For Claim 5 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.

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49. For Claim 6 of the Sullivan patent:

(1) Nesbitt.

50. For Claim 7 of the Sullivan patent:

(1a) Nesbitt alone.

(1b) Nesbitt and Molitor '637 taken together.

(2) Nesbitt and Wu taken together.

(3) Nesbitt and Molitor '751 taken together.

(4) Proudfit and Molitor '637 taken together.

(5) Proudfit and Wu taken together.

(6) Proudfit and Molitor '751 taken together.

51. For Claim 8 of the Sullivan patent:

(1) Nesbitt.

(2) Proudfit in combination with other references.

Requester's SNQs Not Adopted

52. For Claim 3 of the Sullivan patent:

(2) Proudfit in combination with other references.

53. For Claim 6 of the Sullivan patent:

(2) Proudfit in combination with other references.

Office Action on the Merits

54. An Office action on the merits does not accompany this order for *inter partes* reexamination. An Office action on the merits will be provided in due course.

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Conclusion

All correspondence relating to this *inter partes* reexamination proceeding should be directed:

Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Please FAX any communications to:

(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:



Michael O'Neill
CRU Examiner
AU 3993

CONF: JF
AK

EXHIBIT B



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
 United States Patent and Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450
 www.uspto.gov

CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000121	01/17/2006	6503156	

Dorothy P. Whelan
 Fish & Richardson P. C.
 P. O. Box 1022
 Minneapolis MN 55440-1022

EXAMINER

Michael O'Neill

ART UNIT

PAPER

3993

DATE MAILED:

04/07/06

INTER PARTES REEXAMINATION COMMUNICATION

BELOW/ATTACHED YOU WILL FIND A COMMUNICATION FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE OFFICIAL(S) IN CHARGE OF THE PRESENT REEXAMINATION PROCEEDING.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

Howrey LLP
1299 Pennsylvania Avenue N. W.
Washington DC .20004

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,121.

PATENT NUMBER 6503156.

TECHNOLOGY CENTER 3900.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

Transmittal of Communication to Third Party Requester Inter Partes Reexamination	Control No.	Patent Under Reexamination	
	95/000,121	6503156	
	Examiner	Art Unit	
	Michael O' Neill	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

**ORDER GRANTING/DENYING
REQUEST FOR INTER PARTES
REEXAMINATION**

Control No.

95/000,121

Examiner

Michael O'Neill

Patent Under Reexamination

6503156

Art Unit

3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO-1449 or PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☐ An Office action is attached with this order.

☒ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

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DECISION GRANTING INTER PARTES REEXAMINATION

Substantial New Question of Patentability

1. A substantial new question of patentability affecting claims 1-11 of United States Patent Number 6,503,156 to Sullivan is raised by the present request for *inter partes* reexamination.

Extensions of Time

2. Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. § 314(c) requires that *inter partes* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner's response is set by statute. 35 U.S.C. § 314(b)(3).

Notification of Concurrent Proceedings

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent 6,503,156 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2686 and 2686.04.

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Requester's Position

4. The request indicates that third party requester considers:
 - a. Claim 1 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt (USPN 4,431,193) alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
 - b. Claim 2 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
 - c. Claim 3 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
 - d. Claim 4 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.

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- vi. Proudfit taken with Molitor '751.
- e. Claim 5 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
- f. Claim 6 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt solely or Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
- g. Claim 7 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together or Nesbitt and Molitor '751.
 - ii. Proudfit taken with any one of Molitor '637, Wu or Molitor '751.
- h. Claim 8 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
- i. Claim 9 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, Molitor '751.

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- j. Claim 10 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together or Nesbitt and Molitor '751.
 - ii. Proudfit taken with any one of Molitor '637, Wu or Molitor '751.
- k. Claim 11 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together or Nesbitt and Molitor '751.
 - ii. Proudfit taken with any one of Molitor '637, Wu or Molitor '751.

Prosecution History of the Sullivan '156 patent

5. United States Patent Number 6,503,156 issued from an application with application No. 09/873,642, which was a continuation of application No. 09/776,278, filed on Feb. 2, 2001, now Pat. No. 6,595,156, which is a continuation of application No. 09/470,196, filed on Dec. 21, 1999, now Pat. No. 6,210,293. United States Patent Number 6,210,293 issued from an application with the serial number of 09/470,196, filed on Dec. 21, 1999. Said application was a continuation of application No. 08/870,585, filed on Jun. 6, 1997, now abandoned, which is a continuation of application No. 08/556,237, filed on Nov. 9, 1995, now abandoned, which is a continuation-in-part of application No. 08/542,793, filed on Oct. 13, 1995, now abandoned, which is a continuation-in-part of application No. 08/070,510, now abandoned.

6. The "continuation" portion of this series of applications can be found on pages 41-42 within the 08/070,510 application where it states that:

Composition D represents the inner layer (i.e. Surlyn 1605) used in U.S. Patent No. 4,431,193. Composition E provides a hard, low acid ionomeric resin [as the inner layer]. The purpose behind producing and testing the balls of Table IV [Table 7] was to provide a subsequent comparison in properties with the multi-layer golf balls of the present invention [which are high acid ionomer resin inner cover layer with lower acid ionomer resin to the known prior art golf balls which are constructed with a low acid ionomer resin inner cover layers of balls D and E].

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Molded intermediate Ball D in Table IV (7) is the intermediate ball (the inner layer molded onto a solid core) for the Nesbitt '193 patent. Molded intermediate Ball E in Table IV (7) has as its intermediate ball an ionomer blend of Iotek 7030 and 8000. The '510 application then concludes on page 45:

... it is also noted that the use of the high acid ionomer resins as the inner cover material produces a substantial increase in the finished balls overall distance properties. In this regard, the high acid ionomer resin inner covers of balls 1-3 produce an increase of approximately 10 points in C.O.R. [coefficient of restitution] over the low acid ionomer resin inner covers of balls 4 and about a 25 points increase over the prior art balls 5. Since an increase in 3 to 6 points in C.O.R. results in an average increase of about 1 yard in distance, such an improvement is deemed to be significant.

It should be noted that the '510 application lacks providing a finished ball using the molded intermediate Ball E constructed of an ionomer blend of Iotek 7030 and 8000. Instead, the '510 application uses only the molded intermediate Ball D which is constructed out of Surlyn 1605 as the finished balls 4 and 5 in Table 8 which are the prior art balls taught in the Nesbitt. Thus, the '510 appears to lack a finished ball embodiment description constructed with an inner layer made from two ionomer blends with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness and an outer layer made of a polyurethane material with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness. Instead, the '510 application discloses only a molded intermediate Ball E made from a 50/50 blend of two ionomers known as Iotek 7030 and 8000 as shown in Table IV (7) on pages 41-42.

7. The next application in the chain where the claimed invention could be adequately describe and enabled is application No. 08/542,793 ('793 application), which is a continuation-in-part to the '510 application. On page 39, the '793 application discloses:

"Top Grade" or "TG" is a low acid inner cover ionomer resin blend comprising 70.6% Iotek 8000, 19.9% Iotek 7010 and 9.6% white masterbatch.

This disclosure describes the claimed inner cover being of two low acid ionomer blends.

However, the outer layer is described in the '793 application as consisting of ionomer resins and

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non-ionomeric thermoplastic elastomers and not polyurethane. Urethanes (polyurethane) include materials from the carbamate group, as well as other functional groups, such as ester, ether, amide and urea. Therefore, the inner layer claimed in the '293 patent is described and enabled on the date of filing of the '793 application which is Oct. 13, 1995, but not the outer layer claimed in the '293 Patent.

8. The next application in the chain where the claimed invention could be adequately described or enabled is application No. 08/556,237 ('237 application), which is a continuation-in-part to the '793 application. Page 46 describes a plurality of golf balls constructed of a mantle (core and inner layer) consisting of a blend of ionomers, Iotek 8030 and Iotek 7030, and outer layers consisting of Baytec RE832 which is a castable, thermoset polyurethane material. The claimed invention's outer layer requires the material to be a relatively soft polyurethane material. The material that is described in the disclosure that could meet the relatively soft polyurethane material is found on page 24, Estane X-4517. This material is not described as being used in any embodiment disclosed in the '237 application; although it has been concluded that one of ordinary skill in the art could make a finished golf ball embodiment of this material as an outer layer from reading the disclosure contained within the '237 application. Therefore, the claimed invention in the '156 patent appears adequately described in the '237 application. The '237 application has an filing date of Nov. 9, 1995.

9. Therefore, based on the above analysis regarding the disclosures of the parent applications of which claims 35 U.S.C. 120 benefit, the Sullivan '156 patent the inventions claimed in claims 1-11 of the Sullivan '156 patent have a critical date for purposes of prior art patents and printed publications of Nov. 9, 1995.

Substantial New Question vel non

10. The substantial new questions of patentability with respect to Nesbitt for claims 1-11 are based solely on patents and/or printed publications already cited/considered in an earlier concluded examination of the patent being reexamined. On November 2, 2002, Public Law 107-

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273 was enacted. Title III, Subtitle A, Section 13105, part (a) of the Act revised the reexamination statute by adding the following new last sentence to 35 U.S.C. 303(a) and 312(a):

The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

For any reexamination ordered on or after November 2, 2002, the effective date of the statutory revision, reliance on previously cited/considered art, i.e., "old art," does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based exclusively on that old art. Rather, determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis.

In the present instance, there exists a SNQ based solely on Nesbitt (USPN 4,431,193). Nesbitt alone was applied and is now being looked at in a new light. Proudfit, Molitor '637, Molitor '751, and Wu were cited and considered, but not applied. A discussion of the specifics now follows:

RE. CLAIM 1

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

11. It is agreed that the consideration of Nesbitt alone, and Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 1 of the Sullivan patent. As pointed out on pages 14-18 of the request, Nesbitt teaches a two piece golf ball having a solid core with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see

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col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as Estane 58133. There is a substantial likelihood that a review of the scientific literature would be needed to determine the Shore D hardness of Estane 58133. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt solely and Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, is considered to

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raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent. Further, Nesbitt and Molitor '637 taken together are considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

12. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. The request on pages 18-20 considers that Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, it should be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

13. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out on pages 20-22 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having

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a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

14. It is further agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 1 of the Sullivan patent. The above explanation of the prosecution history of the Sullivan patent taken with the below analysis of the prosecution history of Proudfit set forth below will lead to the conclusion that the Proudfit patent qualifies as a prior art patent under 35 U.S.C. § 102(b) thus raising a SNQ as to the claims of the Sullivan patent because Proudfit was utilized as a § 102(e) reference in a § 103(a) rejection against the claims in the parent application No. 08/870,585 as evidenced by the acceptance of a Rule 131 declaration withdrawing the Proudfit reference (see Paper #24, mailed 12-7-99), viewing the Proudfit patent as 35 U.S.C. 102(b) prior art that cannot be antedated under 37 CFR 1.131 is a consideration of the teachings in Proudfit in a "new light."

15. Proudfit has a filing date of Jun. 29, 1992 and is a continuation-in-part of Ser. No. 07/733,789, ('789 application) filed on Jul. 26, 1991, now abandoned. A review of the '789 application appears to not adequately describe and enable an invention of a golf ball having a solid core, an inner layer cover and an outer layer cover. Instead, the '789 application appears to describe and enable a golf ball with a solid core and a single cover layer; instead of the inner and

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outer cover layers shown in Proudfit's figures 1 and 2. Therefore, Proudfit's teachings of a golf ball having a solid core, an inner layer and outer layer has the effective filing date of Jun 29, 1992; the date of filing the Proudfit application which issued into the Proudfit patent. Proudfit issued on May 24, 1994. The claimed inventions within the Sullivan '293 patent have the critical date of Nov. 9, 1995, more than one year after issuance of the Proudfit patent.

16. Thus, it is agreed as stated in the request on pages 22-25 that Proudfit teaches a
 three-piece [two-piece] solid golf ball that includes a core, a hard
 ionomer inner cover layer and a relatively soft outer cover layer
 made of a balata-based material.

Req. at page 22. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skilled in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22 teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck

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by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a “deadening effect similar to balata covered balls” which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

17. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball.

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This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

18. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on pages 26 and 27, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 26. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be acceptable to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover because it lacks the "click" and "feel" which golfers had become accustomed to with balata. *Id* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question

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of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

19. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on page 27 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 27. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be accepted to a golfer. As pointed out on pages 28 and 29 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

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RE. CLAIM 2

1. Nesbitt

20. It is agreed that consideration of Nesbitt raises a SNQ as to claim 2 of the Sullivan patent. Claim 2 depends from claim 1. Claim 2 further defines the claimed invention to have an outer layer thickness range of 0.01 to 0.05 inches. As pointed out in the request on page 29, Nesbitt teaches that

...thickness of the outer layer or cover 16 ... may be in the range of
0.020 inches and 0.100 inches

(Nesbitt, col. 3:22-25). This teaching of viewing Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

21. It is agreed that Proudfit in combination with other references teach all of the limitations of claim 2. Claim 2 requires the outer layer to be about 0.01 to 0.05 inches thick. Proudfit's range of thickness is between about 0.0450 to 0.0650 inches and in its preferred embodiment's outer layer is 0.0525 inches thick, see col. 7:40-46. These teachings of viewing Proudfit in combination with other references were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit in combination with other references raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

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RE. CLAIM 3*1. Nesbitt*

38. It is agreed that consideration of Nesbitt raises a SNQ as to claim 3 of the Sullivan patent. Claim 3 depends directly from claim 1. Claim 3 limits the outer layer to about 0.03 to 0.06 inches thick. As pointed out in the request on pages 31-32, Nesbitt teaches that 1) the outer layer thickness may be in the range of 0.020 inches and 0.100 inches, Nesbitt col. 3:22-25, and a preferred embodiment of Nesbitt has an outer layer of 0.0575 inch thickness, see col. 3: 39-40. This teachings of viewing Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

39. It is agreed that Proudfit in combination with other references teach all of the limitations of claim 3. Claim 3 requires the outer layer to be between about 0.03 to 0.06 inches thick. Proudfit teaches the range of thickness of its outer layer to be between 0.0450 to 0.0650 inches thick and a preferred embodiment has an outer layer of 0.0525 inches thick, see Proudfit col. 7:40-46. These teachings have been pointed out in the request on page 32. These teachings of viewing Proudfit in combination with other references was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

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RE. CLAIM 4

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

40. It is agreed that the consideration of Nesbitt alone, and consideration of Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 4 of the Sullivan. As pointed out in the request on pages 33-36, Nesbitt solely teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Nesbitt solely teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt solely teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt solely teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

"Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention".

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Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. Viewing the teachings of Nesbitt alone, it is clear that these teachings were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Also, the teachings of Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, and Nesbitt and Molitor '637 taken together raise a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

41. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. The request on pages 36-38 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the

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use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor ‘637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor ‘637 taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor ‘751

42. It is agreed that the consideration of Nesbitt taken with Molitor ‘751 raises a SNQ as to claim 4 of the Sullivan patent. As pointed out on pages 38-40 of the request, Molitor ‘751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor ‘751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor ‘751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor ‘751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor ‘751 raises a substantial new question of

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patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

43. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 4 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 40-43 that Proudfit teaches a

“three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.”

Req. at page 40. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a “three-piece” ball. Those skilled in the art understand the term “three-piece ball” to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term “two-piece ball” to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid spherical (see Proudfit's figures) core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 with dimples (again see Proudfit's figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness

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preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

44. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower

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COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a "deadening effect" similar to a balata covered ball.

Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor '637 teaches using a polyurethane material; moreover, a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

45. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. As pointed out in the request on pages 43-45, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 43. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention

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will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

46. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 4 of the Sullivan patent. As pointed out in the request on pages 45-46 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 43. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 48 and 49 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood

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that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 5

1. Nesbitt

It is agreed that consideration of Nesbitt raises a SNQ as to claim 5 of the Sullivan patent. Claim 5 is dependent upon claim 4. Claim 5 limits the outer cover to exhibit a Shore D hardness of about 64 or less. As pointed out in the request on pages 47-48, Nesbitt teaches the outer cover to be made from Surlyn 1855 (now Surlyn 9020), see Nesbitt, col. 2:45. As pointed out in the request on page 47, Nesbitt makes a reference to Molitor '637. Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70

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8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

47. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. There is a substantial likelihood that review of the scientific literature would be needed to deduce the Shore D hardness of the material taught in Molitor ‘637 and referred to by Nesbitt because Nesbitt refers to Molitor ‘637. These teachings of Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

48. It is agreed that consideration of Proudfit in combination with other references raises a SNQ as to claim 5 of the Sullivan patent. Claim 5 is dependent upon claim 4. Claim 5 limits the outer cover to exhibit a Shore D hardness of about 64 or less. As pointed out in the request on

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pages 48, Proudfit has a preferred embodiment of a multilayer golf ball with an outer layer being constructed of a soft material such as balata or a blend of balata and other elastomers. See Proudfit, col. 5:15-17. There is a substantial likelihood that a review of the scientific literature would be needed to deduce the Shore D hardness of the materials taught in Proudfit because balata and blends of balata are quite preferred materials to golfers for outer layer coverings. See Proudfit, col. 1:49-54. These teachings of Proudfit were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 6

1. Nesbitt

49. It is agreed that consideration of Nesbitt raises a SNQ as to claim 6 of the Sullivan patent. Claim 6 is dependent upon claim 4. Claim 6 limits the outer cover thickness from 0.01 to about 0.05 inches. As pointed out in the request on page 49, Nesbitt teaches that the outer cover thickness may be in the range of 0.020 inches and 0.100 inches. See Nesbitt col. 3:22-25. This teaching of viewing Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

50. It is agreed that Proudfit in combination with other references teach all of the limitation of claim 6. Claim 6 requires the inner layer to be between about 0.01 to about 0.05 inches thick and depends from claim 4. Proudfit's range of thickness is between about 0.0450 to 0.0650 inches and in its preferred embodiment's outer layer is 0.0525 inches thick, see col. 7:40-46.

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These teachings of viewing Proudfit in combination with other references were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit in combination with other references raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 7

1. Nesbitt

51. It is agreed that the consideration of Nesbitt solely or Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 7 of the Sullivan. Claim 7 depends directly from claim 4. Claim 7 limits the outer layer to about 0.03 to 0.06 inches thick. As pointed out in the request on page 50, Nesbitt teaches that the range of thickness may be in the range of 0.020 inches to 0.100 inches. See Nesbitt col. 3, lines 22-25. Moreover, a preferred embodiment of Nesbitt has an outer layer of 0.0575 inch thickness, see Nesbitt col. 3: 39-40. These teachings of viewing Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

52. It is agreed that Proudfit in combination with other references teach all of the limitations of claim 7. Claim 7 depends from claim 4 and requires the outer layer to be between about 0.03 to 0.06 inches thick. Proudfit teaches the range of thickness of its outer layer to be between 0.0450 to 0.0650 inches thick and a preferred embodiment has an outer layer of 0.0525 inches thick, see Proudfit col. 7:40-46. These teachings have been pointed out in the request on page 32. These teachings of viewing Proudfit in combination with other references was not present in

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the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 8

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

36. It is agreed that the consideration of Nesbitt alone and consideration of Nesbitt and Molitor '637 taken together, each raises a substantial new question of patentability (SNQ) as to claim 8 of the Sullivan. As pointed out in the request on pages 52-55, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, Nesbitt teaches the inner layer is molded over the core to form an intermediate ball, see Nesbitt col. 2:34-37. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt also teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table

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Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Molitor '637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. There is a substantial likelihood that review the technical properties of the polyurethane used in Molitor '637 would be needed via product information sheets or the like at the time the invention was created. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of Nesbitt alone and the teachings of Nesbitt and Molitor '637 taken together were not present and considered on the record during the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, and Nesbitt and Molitor '637 taken together, are each a basis for concluding that these references raise a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

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2. Nesbitt taken with Wu

37. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 8 of the Sullivan patent. Nesbitt teaches using type 1605 Surlyn for the inner layer which is a high flexural modulus resin. There is a substantial likelihood that a review of the scientific literature would be needed to determine the value of the high flexural modulus resin taught in Nesbitt. The request on pages 55-57 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball circa 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

38. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 8 of the Sullivan patent. Nesbitt teaches using type 1605 Surlyn for the inner layer which

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is a high flexural modulus resin. There is a substantial likelihood that a review of the scientific literature would be needed to determine the value of the high flexural modulus resin taught in Nesbitt. As pointed out on pages 57-59 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, a reasonable examiner would have to review the chemical literature to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

39. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 8 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 59-62 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.

Req. at page 59. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand

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the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 (spherical see figures) and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 (with dimples see figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material.

Although, Proudfit teaches that its soft elastomer material as a flexural modulus in the range of about 20,000 to 25,000 psi, see col. 6:28-31. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the

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COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. However, Molitor ‘637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. Thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material used in Molitor ‘637. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor ‘637 raises a substantial new

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question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

40. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 8 of the Sullivan patent. As pointed out in the request on pages 62-64, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 62. As taught in Proudfit in col. 5:54 to col. 6:5:

The ionomers used for the inner layer are available from E. I. du Pont de Nemours & Co. under the name Surlyn and from Exxon under the name Iotek. Surlyn resins are described in U.S. Pat. No. 3,264,272. As described in that patent, various metal ions can be used to neutralize the acid groups, including sodium, zinc, lithium, and magnesium. The ionomer resins generally fall into three categories which are characterized by hardness or stiffness--standard, high modulus, and low modulus. The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ASTM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Pat. No. 4,884,814.) The high modulus resins have a flexural modulus in the range of about 55,000 to about 100,000 psi. The low modulus resins have a flexural modulus in the range of about 2800 to about 8500 psi.

As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught

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polyurethane material in Wu. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

41. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 8 of the Sullivan patent. As pointed out in the request on pages 64-65 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 64. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 64 and 65 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new

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question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 9

1. Nesbitt

42. It is agreed that consideration of Nesbitt raises a SNQ as to claim 9 of the Sullivan patent. Claim 9 is dependent upon claim 8. Claim 9 limits the outer cover to exhibit a Shore D hardness of about 64 or less. As pointed out in the request on page 66, Nesbitt teaches the outer cover to be made from Surlyn 1855 (now Surlyn 9020), see Nesbitt, col. 2:45. As pointed out in the request on page 66, Nesbitt makes a reference to Molitor '637. Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Richle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66

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12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. There is a substantial likelihood that review of the scientific literature would be needed to deduce the Shore D hardness of the material taught in Molitor ‘637 and referred to by Nesbitt because Nesbitt refers to Molitor ‘637. These teachings of Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 8, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

43. It is agreed that consideration of Proudfit in combination with other references raises a SNQ as to claim 9 of the Sullivan patent. Claim 9 is dependent upon claim 8. Claim 9 limits the outer cover to exhibit a Shore D hardness of about 64 or less. As pointed out in the request on page 67, Proudfit has a preferred embodiment of a multilayer golf ball with an outer layer being constructed of a soft material such as balata or a blend of balata and other elastomers. See Proudfit, col. 5:15-17. There is a substantial likelihood that a review of the scientific literature

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would needed to deduce the Shore D hardness of the materials taught in Proudfit because balata and blends of balata are quite preferred materials to golfers for outer layer coverings. See Proudfit, col. 1:49-54. These teachings of Proudfit were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 9, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 10

1. Nesbitt

44. It is agreed that consideration of Nesbitt raises a SNQ as to claim 10 of the Sullivan patent. Claim 10 is dependent upon claim 8. Claim 10 limits the outer cover thickness from 0.01 to about 0.05 inches. As pointed out in the request on page 68, Nesbitt teaches that the outer cover thickness may be in the range of 0.020 inches and 0.100 inches. See Nesbitt col. 3:22-25. This teaching of viewing Nesbitt was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 10, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

45. It is agreed that Proudfit in combination with other references teach all of the limitation of claim 10. Claim 10 requires the inner layer to be between about 0.01 to about 0.05 inches thick and depends from claim 8. Proudfit's range of thickness is between about 0.0450 to 0.0650 inches and in its preferred embodiment's outer layer is 0.0525 inches thick, see col. 7:40-46. These teachings of viewing Proudfit in combination with other references were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit in combination with other

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references raises a substantial new question of patentability as to claim 10, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 11

1. Nesbitt

46. It is agreed that the consideration of Nesbitt solely or Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 11 of the Sullivan. Claim 11 depends directly from claim 8. Claim 11 limits the outer layer to about 0.03 to 0.06 inches thick. As pointed out in the request on page 69, Nesbitt teaches that the range of thickness may be in the range of 0.020 inches to 0.100 inches. See Nesbitt col. 3, lines 22-25. Moreover, a preferred embodiment of Nesbitt has an outer layer of 0.0575 inch thickness, see Nesbitt col. 3: 39-40. These teachings of viewing Nesbitt were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 7, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

47. It is agreed that Proudfit in combination with other references teach all of the limitations of claim 11. Claim 11 depends from claim 8 and requires the outer layer to be between about 0.03 to 0.06 inches thick. Proudfit teaches the range of thickness of its outer layer to be between 0.0450 to 0.0650 inches thick and a preferred embodiment has an outer layer of 0.0525 inches thick, see Proudfit col. 7:40-46. These teachings have been pointed out in the request on page 70. These teachings of viewing Proudfit in combination with other references was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit raises a substantial new

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question of patentability as to claim 11, which question has not been decided in a previous examination of the Sullivan patent.

Summary of SNQs Adopted and Not Adopted

Requester's SNQs Adopted

48. For Claim 1 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.

49. For Claim 2 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.

50. For Claim 3 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.

51. For Claim 4 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.

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52. For Claim 5 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.
53. For Claim 6 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.
54. For Claim 7 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.
55. For Claim 4 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.
56. For Claim 5 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.
57. For Claim 6 of the Sullivan patent:
 - (1) Nesbitt.
 - (2) Proudfit in combination with other references.

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58. For Claim 7 of the Sullivan patent:

(1) Nesbitt.

(2) Proudfit in combination with other references.

Office Action on the Merits

59. An Office action on the merits does not accompany this order for *inter partes* reexamination. An Office action on the merits will be provided in due course.

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Conclusion

All correspondence relating to this *inter partes* reexamination proceeding should be directed:

Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Please FAX any communications to:

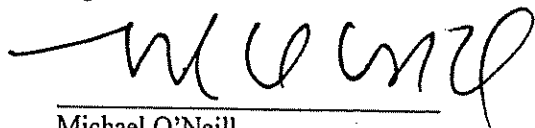
(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:



Michael O'Neill
CRU Examiner
AU 3993

CONF: 17
OK

EXHIBIT C



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
 United States Patent and Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450
 www.uspto.gov

CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000122	01/17/2006	6506130	

Dorothy P. Whelan
 Fish & Richardson
 P. O. Box 1022
 Minneapolis MN 55440-1022

EXAMINER

Michael O'Neill

ART UNIT	PAPER
----------	-------

3993

DATE MAILED:

04/06/06

INTER PARTES REEXAMINATION COMMUNICATION

BELOW/ATTACHED YOU WILL FIND A COMMUNICATION FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE OFFICIAL(S) IN CHARGE OF THE PRESENT REEXAMINATION PROCEEDING.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
 United States Patent and Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450
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CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000122	01/17/2006	6506130	

Dorothy P. Whelan
 Fish & Richardson
 P. O. Box 1022
 Minneapolis MN 55440-1022

EXAMINER

Michael O'Neill

ART UNIT

PAPER

3993

DATE MAILED:

04/06/06

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UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, VA 22313-1450
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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

ALAN M. GRIMALDI
HOWREY LLP
1299 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

Transmittal of Communication to Third Party Requester *Inter Partes* Reexamination

REEXAMINATION CONTROL NUMBER 95/000,122.

PATENT NUMBER 6,506,130.

TECHNOLOGY CENTER 3900.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

Transmittal of Communication to Third Party Requester Inter Partes Reexamination	Control No.	Patent Under Reexamination	
	95/000,122	6506130	
	Examiner	Art Unit	
	Michael O'Neill	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

ORDER GRANTING/DENYING REQUEST FOR INTER PARTES REEXAMINATION	Control No.	Patent Under Reexamination	
	95/000,122	6506130	
	Examiner	Art Unit	
	Michael O'Neill	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO-1449 or PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☐ An Office action is attached with this order.

☒ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

DECISION GRANTING INTER PARTES REEXAMINATION

Substantial New Question of Patentability

1. A substantial new question of patentability affecting claims 1-6 of United States Patent Number 6,506,130 to Sullivan is raised by the present request for *inter partes* reexamination.

Extensions of Time

2. Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. § 314(c) requires that *inter partes* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner's response is set by statute. 35 U.S.C. § 314(b)(3).

Notification of Concurrent Proceedings

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent 6,506,130 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2686 and 2686.04.

Requester's Position

4. The request indicates that third party requester considers:
 - a. Claim 1 of the Sullivan patent to be unpatentable over:
 - i. Proudfit.
 - ii. Sullivan '831.
 - iii. Nesbitt alone, and Nesbitt taken with Molitor '637.
 - iv. Nesbitt taken with Wu.
 - v. Nesbitt taken with Molitor '751.
 - b. Claim 2 of the Sullivan patent to be unpatentable over:
 - i. Proudfit.
 - ii. Sullivan '831.
 - iii. Nesbitt.
 - c. Claim 3 of the Sullivan patent to be unpatentable over:
 - i. Proudfit.
 - ii. Sullivan '831.
 - iii. Nesbitt.
 - d. Claim 4 of the Sullivan patent to be unpatentable over:
 - i. Sullivan '831.
 - ii. Proudfit taken with Molitor '637.
 - iii. Proudfit taken with Wu.
 - iv. Proudfit taken with Molitor '751.
 - v. Nesbitt alone, and Nesbitt taken with Molitor '637
 - vi. Nesbitt taken with Wu.
 - vii. Nesbitt taken with Molitor '751.
 - e. Claim 5 of the Sullivan patent to be unpatentable over:
 - i. Sullivan '831.
 - ii. Nesbitt alone, and Nesbitt taken with Molitor '637.

- iii. Nesbitt taken with Wu.
- iv. Nesbitt taken with Molitor '751.
- v. Proudfit taken with Molitor '637.
- vi. Proudfit taken with Wu.
- vii. Proudfit taken with Molitor '751.
- f. Claim 6 of the Sullivan patent to be unpatentable over:
 - i. Sullivan '831.
 - ii. Nesbitt alone, and Nesbitt taken with Molitor '637.
 - iii. Nesbitt taken with Wu.
 - iv. Nesbitt taken with Molitor '751.
 - v. Proudfit taken with Molitor '637.
 - vi. Proudfit taken with Wu.
 - vii. Proudfit taken with Molitor '751.

Prosecution History of the Sullivan '130 patent

5. United States Patent Number 6,506,130 issued from an application with the serial number of 09/832,154. Said '154 application was a continuation from application No. 08/870,585, filed on Jun. 6, 1997, now abandoned, which is a continuation of application No. 08/556,237, filed on Nov. 9, 1995, now abandoned, which is a continuation-in-part of application No. 08/542,793, filed on Oct. 13, 1995, now abandoned, which is a continuation-in-part of application No. 08/070,510, filed on Jun. 1, 1993, now abandoned.

6. The "continuation" portion of this series of applications can be found on pages 41-42 within the 08/070,510 application where it states that:

Composition D represents the inner layer (i.e. Surlyn 1605) used in U.S. Patent No. 4,431,193. Composition E provides a hard, low acid ionomeric resin [as the inner layer]. The purpose behind producing and testing the balls of Table IV [Table 7] was to provide a subsequent comparison in properties with the multi-layer golf balls of the present invention [which are high acid ionomer resin inner cover layer with

lower acid ionomer resin to the known prior art golf balls which are constructed with a low acid ionomer resin inner cover layers of balls D and E].

Molded intermediate Ball D in Table IV (7) is the intermediate ball (the inner layer molded onto a solid core) for the Nesbitt '193 patent. Molded intermediate Ball E in Table IV (7) has as its intermediate ball an ionomer blend of Iotek 7030 and 8000. The '510 application then concludes on page 45:

... it is also noted that the use of the high acid ionomer resins as the inner cover material produces a substantial increase in the finished balls overall distance properties. In this regard, the high acid ionomer resin inner covers of balls 1-3 produce an increase of approximately 10 points in C.O.R. [coefficient of restitution] over the low acid ionomer resin inner covers of balls 4 and about a 25 points increase over the prior art balls 5. Since an increase in 3 to 6 points in C.O.R. results in an average increase of about 1 yard in distance, such an improvement is deemed to be significant.

It should be noted that the '510 application lacks providing a finished ball using the molded intermediate Ball E constructed of an ionomer blend of Iotek 7030 and 8000. Instead, the '510 application uses only the molded intermediate Ball D which is constructed out of Surlyn 1605 as the finished balls 4 and 5 in Table 8 which are the prior art balls taught in the Nesbitt. Thus, the '510 appears to lack a finished ball embodiment description constructed with an inner layer made from two ionomer blends with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness and an outer layer made of a polyurethane material with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness. Instead, the '510 application discloses only a molded intermediate Ball E made from a 50/50 blend of two ionomers known as Iotek 7030 and 8000 as shown in Table IV (7) on pages 41-42.

7. The next application in the chain where the claimed invention could be adequately describe and enabled is application No. 08/542,793 ('793 application), which is a continuation-in-part to the '510 application. On page 39, the '793 application discloses:

“Top Grade” or “TG” is a low acid inner cover ionomer resin blend comprising 70.6% Iotek 8000, 19.9% Iotek 7010 and 9.6% white masterbatch.

This disclosure describes the claimed inner cover being of two low acid ionomer blends. The outer layer is described in the ‘793 application as consisting of ionomer resins and non-ionomeric thermoplastic elastomers. Therefore, the inner layer claimed in the ‘293 patent is described and enabled on the date of filing of the ‘793 application which is Oct. 13, 1995, and the outer layer claimed in the ‘130 Patent.

8. Therefore, based on the above analysis regarding the disclosures of the parent applications of which the Sullivan ‘130 patent claims 35 U.S.C. § 120 benefit, the inventions claimed in claims 1-6 of the Sullivan ‘130 patent have a critical date for purposes of prior art patents and printed publications of Oct. 13, 1995.

The Requester's Position that the '130 Patent lacks Copendency

9. The request indicates on pages 12 and 13 that the ‘130 Patent is not an appropriate continuation application because it lacks copendency because application No. 08/870,585 went abandoned on Feb. 7, 2001 when the Applicant failed to file an appeal brief with two months of a notice of appeal. However, a review of the Office's records show that the Applicant filed a one month extension of time; an additional two months extension of time; and a notice of appeal which provides an Applicant with two months of time. Therefore, the Applicant extended the response time to the final rejection for five months which allow the Applicant to file a response to the final rejection up until April 13, 2001. Application No. 09/832,154, the application to which the ‘130 Patent issued therefrom, was filed on April 10, 2001. Therefore, the Patent Owner of the ‘130 Patent maintained proper copendency between the ‘585 application and the ‘154 application.

Substantial New Question vel non

10. The substantial new questions of patentability with respect to Nesbitt for claims 1-6 are based solely on patents and/or printed publications already cited/considered in an earlier concluded examination of the patent being reexamined. On November 2, 2002, Public Law 107-273 was enacted. Title III, Subtitle A, Section 13105, part (a) of the Act revised the reexamination statute by adding the following new last sentence to 35 U.S.C. 303(a) and 312(a):

The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

For any reexamination ordered on or after November 2, 2002, the effective date of the statutory revision, reliance on previously cited/considered art, i.e., "old art," does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based exclusively on that old art. Rather, determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis.

In the present instance, there exists a SNQ based solely on Nesbitt (USPN 4,431,193). Nesbitt alone was applied and is now being looked at in a new light. Proudfit, Molitor '637, Molitor '751, and Wu were cited and considered, but not applied. A discussion of the specifics now follows:

RE. CLAIM 1

1. Proudfit

11. It is agreed that the consideration of Proudfit raises a SNQ as to claim 1 of the Sullivan patent. The above explanation of the prosecution history of the Sullivan patent, taken with the analysis of the prosecution history of Proudfit set forth below, will lead to the conclusion that the Proudfit patent qualifies as a prior art patent under 35 U.S.C. § 102(b) thus raising a SNQ as to the claims of the Sullivan patent. Because Proudfit was

utilized as a § 102(e) reference in a § 103(a) rejection against the claims in the parent application No. 08/870,585 as evidenced by the acceptance of a Rule 131 declaration withdrawing the Proudfit reference (see Paper #24, mailed 12-7-99), viewing the Proudfit patent as 35 U.S.C. §102(b) prior art that cannot be antedated under 37 CFR 1.131 is a consideration of the teachings in Proudfit in a "new light."

12. Proudfit has a filing date of Jun. 29, 1992 and is a continuation-in-part of Ser. No. 07/733,789, ('789 application) filed on Jul. 26, 1991, now abandoned. A review of the '789 application appears to not adequately describe and enable an invention of a golf ball having a solid core, an inner layer cover and an outer layer cover. Instead, the '789 application appears to describe and enable a golf ball with a solid core and a single cover layer; instead of the inner and outer cover layers shown in Proudfit's figures 1 and 2. Therefore, Proudfit's teachings of a golf ball having a solid core, an inner layer and outer layer has the effective filing date of Jun 29, 1992; the date of filing the Proudfit application which issued into the Proudfit patent. Proudfit issued on May 24, 1994. The claimed inventions within the Sullivan '130 patent have the critical date of Oct. 13, 1995, more than one year after issuance of the Proudfit patent.

13. Thus, it is agreed as stated in the request on pages 15-17 that Proudfit teaches a
three-piece [two-piece] solid golf ball that includes a core,
a hard ionomer inner cover layer and a relatively soft outer
cover layer made of a balata-based material.

Req. at page 15. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skilled in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22 teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 and a cover 12

which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

2. Sullivan '831

14. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 1 of the Sullivan patent. In light of the explanation of the prosecution history of the Sullivan patent as to copendency set forth in paragraph 8 above, Sullivan '831 is not prior art.

3. Nesbitt alone, and Nesbitt taken with Molitor '637

15. It is agreed that the consideration of Nesbitt alone, or Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 1 of the Sullivan patent. As pointed out on pages 14-18 of the request, Nesbitt teaches a two piece golf ball having a solid core with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and

.100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637
which describes a number of foamable [cellular]
compositions of a character which may be employed for
one or both layers 14 and 16 of the golf ball of this
invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt alone and

Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, is considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent. Further, Nesbitt and Molitor '637 taken together are considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

4. Nesbitt taken with Wu

16. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. The request on pages 18 and 19 considers that Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, it should be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

5. Nesbitt taken with Molitor '751

17. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out on pages 20 and 21 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 2

1. Proudfit

18. It is agreed that consideration of Proudfit raises a SNQ as to claim 2 of the Sullivan patent. Claim 2 is dependent upon claim 1. Claim 2 limits the inner layer thickness within the range of 0.100 to 0.010 inches thick; the outer layer thickness within the range of 0.010 and 0.070 and the overall ball diameter at least 1.680 inches. As pointed out in the request on pages 29-30, Proudfit has a preferred embodiment of a multilayer golf ball with an inner layer being 0.037 inches thick; an outer layer being 0.0525 inches thick; and an overall diameter of 1.680 inches. See Proudfit, col. 7:40-47. These teachings of Proudfit were not present in the prosecution of the application that issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable

examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

2. Sullivan '831

19. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 2 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent dealing with copendency Sullivan '831 is not prior art.

3. Nesbitt

20. It is agreed that consideration of Nesbitt raises a SNQ as to claim 2 of the Sullivan patent. Claim 2 is dependent upon claim 1. Claim 2 limits the inner layer thickness within the range of 0.100 to 0.010 inches thick; the outer layer thickness within the range of 0.010 and 0.070 and the overall ball diameter at least 1.680 inches. As pointed out in the request on pages 31-32, Nesbitt teaches the inner layer thickness being between 0.020 and 0.070 inches (Nesbitt, col. 3:19-23); the outer layer thickness being between 0.020 and 0.100 inches (Nesbitt, col. 3:22-25) and the minimum diameter of 1.680 inches (Nesbitt, col. 2:50-52). These teachings of Nesbitt were not present during the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 3

1. Proudfit

21. It is **not agreed** that Proudfit in combination with other references teach all of the limitation of claim 3. Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 3 requires the inner layer to be about 0.050 inches thick.

Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, a reasonable examiner would not consider this teaching important in deciding whether or not the claim is patentable. Thus, Proudfit singly or in combination with the other references does not raise a SNQ with respect to claim 3.

2. Sullivan '831

22. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 3 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent dealing with copendency Sullivan '831 is not prior art.

3 Nesbitt

23. It is agreed that consideration of Nesbitt raises a SNQ as to claim 6 of the Sullivan patent. Claim 3 is dependent upon claim 1. Claim 3 limits the inner and outer cover thickness to 0.050 inches and 0.055, respectively. As pointed out in the request on pages 35-36, Nesbitt teaches that a preferred embodiment has an outer layer of 0.0575 inch thickness. If the standard USGA golf ball has an overall minimum diameter of 1.680 inches and Nesbitt in col. 3:29 teaches that a preferred solid core plus inner thickness diameter is 1.565 inches, then Nesbitt inner layer thickness to match the preferred outer layer and solid core diameter in order to yield a total diameter of 1.680 inches would be about 0.0525 inches to be within the given inner layer range of between 0.020 to 0.070 inches. These teachings of viewing Nesbitt were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of

patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 4

1. Sullivan '831

24. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 4 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent dealing with copendency Sullivan '831 is not prior art.

2. Proudfit taken with Molitor '637

25. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 4 of the Sullivan patent. Claim 4 depends from claim 1 and limits the group of non-ionomeric thermoplastic and thermosetting elastomers to polyurethane. As stated in the request on pages 37-39 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core,
a hard ionomer inner cover layer and a relatively soft outer
cover layer made of a balata-based material.

Req. at page 37. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skilled in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22 teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. Proudfit in

column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66

18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

26. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor ‘637 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

3. Proudfit taken with Wu

27. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. Claim 4 depends from claim 1 and limits the group of non-ionomeric thermoplastic and thermosetting elastomers to polyurethane. As pointed out in the request on page 39, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 39. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain “click” and “feel” to the golfer upon a golf swing. What gives a golf ball a certain “click” and “feel” are the

mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be acceptable to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover because it lacks the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '751

28. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 4 of the Sullivan patent. Claim 4 depends from claim 1 and limits the group of non-ionomeric thermoplastic and thermosetting elastomers to polyurethane. As pointed out in the request on page 41 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 41. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel"

similar to a balata covered ball, any material would be accepted to a golfer. As pointed out on pages 41 and 42 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

5. Nesbitt alone, and Nesbitt and Molitor '637 taken together

29. It is agreed that the consideration of Nesbitt alone, and consideration of Nesbitt and Molitor '637 taken together, each raises a substantial new question of patentability (SNQ) as to claim 4 of the Sullivan patent. Claim 4 depends from claim 1 and limits the group of non-ionomeric thermoplastic and thermosetting elastomers to polyurethane. As pointed out on pages 42-44 of the request, Nesbitt teaches a two piece golf ball having a solid core with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Nesbitt teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt solely teaches a suitable material for the inner layer 14 being a thermoplastic resin

designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt solely teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637
which describes a number of foamable [cellular]
compositions of a character which may be employed for
one or both layers 14 and 16 of the golf ball of this
invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt also teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt further teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. Viewing the teachings of Nesbitt alone, it is clear that these teachings were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable

examiner would consider these teachings important in deciding whether or not the claim is patentable. Also, the teachings of Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, and Nesbitt and Molitor '637 taken together raise a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

30. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 4 of the Sullivan patent. The request on pages 44 and 45 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, it should be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

31. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 4 of the Sullivan patent. Claim 4 depends from claim 1 and limits the group of non-ionomeric thermoplastic and thermosetting elastomers to polyurethane. As pointed out on pages 46 and 47 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 5

1. Sullivan '831

32. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 5 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent dealing with copendency Sullivan '831 is not prior art.

2. Nesbitt and Nesbitt and Molitor '637

33. It is agreed that the consideration of Nesbitt alone and consideration of Nesbitt and Molitor '637 taken together, each raises a substantial new question of patentability

(SNQ) as to claim 5 of the Sullivan. As pointed out in the request on pages 51-53, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, Nesbitt teaches the inner layer is molded over the core to form an intermediate ball, see Nesbitt col. 2:34-37. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt *alone* teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a

polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Molitor '637 lacks teaching the actual flexural modulus of the polyurethane used in covering the solid core. There is a substantial likelihood that review the technical properties of the polyurethane used in Molitor '637 would be needed via product information sheets or the like. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. The teachings of Nesbitt alone, and the teachings of Nesbitt and Molitor '637 taken together, were not present and considered on the record during the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, and Nesbitt and Molitor '637 taken together, are each a basis for concluding that these references raise a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

3 Nesbitt taken with Wu

34. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 5 of the Sullivan patent. The request on pages 55-56 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col.

3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

4. Nesbitt taken with Molitor '751

35. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 5 of the Sullivan patent. As pointed out on pages 57 and 58 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate

the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, a reasonable examiner would have to review the chemical literature to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Molitor '637

36. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 5 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 11 and incorporated herein. It is agreed as stated in the request on pages 58-61 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core,
a hard ionomer inner cover layer and a relatively soft outer
cover layer made of a balata-based material.

Req. at page 58. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 (spherical see figures) and a cover 12 which comprises a

relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 (with dimples see figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. Although, Proudfit teaches that its soft elastomer material as a flexural modulus in the range of about 20,000 to 25,000 psi, see col. 6:28-31. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

37. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a "deadening effect" similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor '637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. However, Molitor '637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. Thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material used in Molitor '637. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a

substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Wu

38. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 5 of the Sullivan patent. As pointed out in the request on pages 62-63, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 62. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly,

Proudfit taken with Wu raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

7. Proudfit taken with Molitor '751

39. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 5 of the Sullivan patent. As pointed out in the request on pages 64-65 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 64. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 64 and 65 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review of the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings

important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 6

1. Sullivan '831

40. It is **not agreed** that the consideration of Sullivan '831 raises a SNQ as to claim 6 of the Sullivan patent. With the above explanation of the prosecution history of the Sullivan patent dealing with copendency Sullivan '831 is not prior art.

2. Nesbitt alone, and Nesbitt and Molitor '637

41. It is agreed that the consideration of Nesbitt alone, and consideration of Nesbitt and Molitor '637 taken together, each raises a substantial new question of patentability (SNQ) as to claim 6 of the Sullivan. As pointed out in the request on pages 69-71, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, Nesbitt teaches the inner layer is molded over the core to form an intermediate ball, see Nesbitt col. 2:34-37. Nesbitt solely teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt also teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Further, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also

contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637
which describes a number of foamable [cellular]
compositions of a character which may be employed for
one or both layers 14 and 16 of the golf ball of this
invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Molitor '637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. There is a substantial likelihood that review the technical properties of the polyurethane used in Molitor '637 would be needed via product information sheets or the like. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of Nesbitt alone, and the teachings of Nesbitt and Molitor '637 taken together, were both not present in the prosecution of the application which became the Sullivan patent. Further,

there is a substantial likelihood that a reasonable examiner would consider these teachings in Nesbitt alone and the teachings of Nesbitt taken with Molitor '637 important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, and Nesbitt and Molitor '637 taken together, each provide a rationale that raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

3 Nesbitt taken with Wu

42. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 6 of the Sullivan patent. The request on pages 72-74 considers Nesbitt solely teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new

question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

4. Nesbitt taken with Molitor '751

43. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 6 of the Sullivan patent. As pointed out on pages 74 and 75 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, a reasonable examiner would have to review the chemical literature to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Molitor '637

44. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 6 of the Sullivan patent. The explanation of how Proudfit constitutes a

prior art patent is discussed above at item 11 and incorporated herein. It is agreed as stated in the request on pages 76-79 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core,
a hard ionomer inner cover layer and a relatively soft outer
cover layer made of a balata-based material.

Req. at page 76. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 (spherical see figures) and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 (with dimples see figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. Although, Proudfit teaches that its soft elastomer material as a flexural modulus in the range of about 20,000 to 25,000 psi, see col. 6:28-31. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR)

means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

45. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a "deadening effect" similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar

to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor '637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. However, Molitor '637 lacks teaching the actual flexural modulus of the polyurethane used in covering the solid core. Thus, there is a substantial likelihood that a review of the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material used in Molitor '637. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Wu

46. It is agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 6 of the Sullivan patent. As pointed out in the request on page 81-82, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 81. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover

layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

7. Proudfit taken with Molitor '751

47. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 6 of the Sullivan patent. As pointed out in the request on page 82-83 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 81. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself, but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 82 and 83 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment

in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review of the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

Summary of SNQs Adopted and Not Adopted

Requester's SNQs Adopted

48. For Claim 1 of the Sullivan patent:

- (1) Proudfit.
- (3a) Nesbitt alone
- (3b) Nesbitt taken with Molitor '637.
- (4) Nesbitt taken with Wu.
- (5) Nesbitt taken with Molitor '751.

49. For Claim 2 of the Sullivan patent:

- (1) Proudfit
- (3) Nesbitt.

50. For Claim 3 of the Sullivan patent:

- (3) Nesbitt.

51. For Claim 4 of the Sullivan patent:

- (2) Proudfit taken with Molitor '637.
- (3) Proudfit taken with Wu.
- (4) Proudfit taken with Molitor '751.
- (5a) Nesbitt alone.
- (5b) Nesbitt taken with Molitor '637.
- (6) Nesbitt taken with Wu.
- (7) Nesbitt taken with Molitor '751.

52. For Claim 5 of the Sullivan patent:

- (2a) Nesbitt alone.
- (2b) Nesbitt taken with Molitor '637.
- (3) Nesbitt taken with Wu.
- (4) Nesbitt taken with Molitor '751.
- (5) Proudfit taken with Molitor '637.
- (6) Proudfit taken with Wu.
- (7) Proudfit taken with Molitor '751.

53. For Claim 6 of the Sullivan patent:

- (2a) Nesbitt alone.
- (2b) Nesbitt taken with Molitor '637.
- (3) Nesbitt taken with Wu.
- (4) Nesbitt taken with Molitor '751.
- (5) Proudfit taken with Molitor '637.
- (6) Proudfit taken with Wu.
- (7) Proudfit taken with Molitor '751.

Requester's SNQs Not Adopted.

54. For Claim 1 of the Sullivan patent:

- (2) Sullivan '831.

55. For Claim 2 of the Sullivan patent:

(2) Sullivan '831.

56. For Claim 3 of the Sullivan patent:

(1) Proudfit.

(2) Sullivan '831.

57. For Claim 4 of the Sullivan patent:

(1) Sullivan '831.

58. For Claim 5 of the Sullivan patent:

(1) Sullivan '831.

59. For Claim 6 of the Sullivan patent:

(1) Sullivan '831.

Office Action on the Merits

60. An Office action on the merits does not accompany this order for *inter partes* reexamination. An Office action on the merits will be provided in due course.

Application/Control Number: 95/000,122

Page 41

Art Unit: 3993

Conclusion

All correspondence relating to this *inter partes* reexamination proceeding should be directed:

Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Please FAX any communications to:

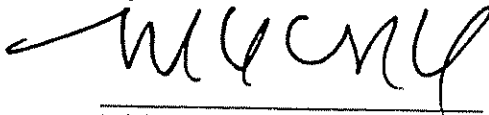
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Central Reexamination Unit

Please hand-deliver any communications to:

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Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:



Michael O'Neill
CRU Examiner
AU 3993

CONF: 27
AC

EXHIBIT D



UNITED STATES PATENT AND TRADEMARK OFFICE

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CONTROL NO.	FILING DATE	PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
95/000123	01/17/2006	6595873	

Dorothy P. Whelan
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 Minneapolis MN 55440-1022

EXAMINER

Michael O'Neill

ART UNIT	PAPER
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3993

DATE MAILED:

04/06/06

INTER PARTES REEXAMINATION COMMUNICATION

BELOW/ATTACHED YOU WILL FIND A COMMUNICATION FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE OFFICIAL(S) IN CHARGE OF THE PRESENT REEXAMINATION PROCEEDING.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this communication.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

Alan M. Grimaldi
Howrey LLP
1299 Pennsylvania Avenue NW
Washington, DC 20004

**Transmittal of Communication to Third Party Requester
Inter Partes Reexamination**

REEXAMINATION CONTROL NUMBER 95/000,123.

PATENT NUMBER 6,595,873.

TECHNOLOGY CENTER 3900.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

Transmittal of Communication to Third Party Requester Inter Partes Reexamination	Control Number	Patent Under Reexamination	
	95/000,123	659587	
	Examiner	Art Unit	
	Michael O'Neill	3993	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified reexamination proceeding. 37 CFR 1.903.

Prior to the filing of a Notice of Appeal, each time the patent owner responds to this communication, the third party requester of the *inter partes* reexamination may once file written comments within a period of 30 days from the date of service of the patent owner's response. This 30-day time period is statutory (35 U.S.C. 314(b)(2)), and, as such, it cannot be extended. See also 37 CFR 1.947.

If an *ex parte* reexamination has been merged with the *inter partes* reexamination, no responsive submission by any *ex parte* third party requester is permitted.

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of the communication enclosed with this transmittal.

**ORDER GRANTING/DENYING
REQUEST FOR INTER PARTES
REEXAMINATION**

Control No.

95/000,123

Examiner

Michael O'Neill

Patent Under Reexamination

6595873

Art Unit

3993

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

The request for *inter partes* reexamination has been considered. Identification of the claims, the references relied on, and the rationale supporting the determination are attached.

Attachment(s): ☐ PTO-892 ☒ PTO-1449 or PTO/SB/08 ☐ Other: _____

1. ☒ The request for *inter partes* reexamination is GRANTED.

☐ An Office action is attached with this order.

☒ An Office action will follow in due course.

2. ☐ The request for *inter partes* reexamination is DENIED.

This decision is not appealable. 35 U.S.C. 312(c). Requester may seek review of a denial by petition to the Director of the USPTO within ONE MONTH from the mailing date hereof. 37 CFR 1.927. EXTENSIONS OF TIME ONLY UNDER 37 CFR 1.183. In due course, a refund under 37 CFR 1.26(c) will be made to requester.

All correspondence relating to this *inter partes* reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Order.

DECISION GRANTING INTER PARTES REEXAMINATION

Substantial New Question of Patentability

1. A substantial new question of patentability affecting claims 1-6 of United States Patent Number 6,595,873 to Sullivan is raised by the present request for *inter partes* reexamination.

Extensions of Time

2. Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes* reexamination proceedings because the provisions of 37 CFR 1.136 apply only to “an applicant” and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. § 314(c) requires that *inter partes* reexamination proceedings “will be conducted with special dispatch” (37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are provided for in 37 CFR 1.956. Extensions of time are not available for third party requester comments, because a comment period of 30 days from service of patent owner’s response is set by statute. 35 U.S.C. § 314(b)(3).

Notification of Concurrent Proceedings

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent 6,595,873 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2686 and 2686.04.

Requester's Position

4. The request indicates that third party requester considers:
 - a. Claim 1 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt (USPN 4,431,193) alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
 - b. Claim 2 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
 - c. Claim 3 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
 - d. Claim 4 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.

- ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.
- e. Claim 5 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together.
 - ii. Nesbitt taken with Wu.
 - iii. Nesbitt taken with Molitor '751.
 - iv. Proudfit taken with Molitor '637.
 - v. Proudfit taken with Wu.
 - vi. Proudfit taken with Molitor '751.
- f. Claim 6 of the Sullivan patent to be unpatentable over:
 - i. Nesbitt alone, and Nesbitt and Molitor '637 taken together; Nesbitt and Wu taken together; or Nesbitt and Molitor '751 taken together.
 - ii. Proudfit taken with any one of Molitor '637, Wu, or Molitor '751.

Prosecution History of the Sullivan '873 patent

5. United States Patent Number 6,595,873 issued from an application with the serial number of 09/776,278. Said '278 application was a continuation from an application with the serial number of 09/470,196, filed on Dec. 21, 1999, now Pat. No. 6,210,293, which was a continuation of application No. 08/870,585, filed on Jun. 6, 1997, now abandoned, which is a continuation of application No. 08/556,237, filed on Nov. 9, 1995, now abandoned, which is a continuation-in-part of application No. 08/542,793, filed on Oct. 13, 1995, now abandoned, which is a continuation-in-part of application No. 08/070,510, now abandoned.

6. The "continuation" portion of this series of applications can be found on pages 41-42 within the 08/070,510 application where it states that:

Composition D represents the inner layer (i.e. Surlyn 1605) used in U.S. Patent No. 4,431,193. Composition E provides a hard, low acid ionomeric resin [as the inner layer]. The purpose behind producing and testing the balls of Table IV [Table 7] was to provide a subsequent comparison in properties with the multi-layer golf balls of the present invention [which are high acid ionomer resin inner cover layer with lower acid ionomer resin to the known prior art golf balls which are constructed with a low acid ionomer resin inner cover layers of balls D and E].

Molded intermediate Ball D in Table IV (7) is the intermediate ball (the inner layer molded onto a solid core) for the Nesbitt '193 patent. Molded intermediate Ball E in Table IV (7) has as its intermediate ball an ionomer blend of Iotek 7030 and 8000. The '510 application then concludes on page 45:

... it is also noted that the use of the high acid ionomer resins as the inner cover material produces a substantial increase in the finished balls overall distance properties. In this regard, the high acid ionomer resin inner covers of balls 1-3 produce an increase of approximately 10 points in C.O.R. [coefficient of restitution] over the low acid ionomer resin inner covers of balls 4 and about a 25 points increase over the prior art balls 5. Since an increase in 3 to 6 points in C.O.R. results in an average increase of about 1 yard in distance, such an improvement is deemed to be significant.

It should be noted that the '510 application lacks providing a finished ball using the molded intermediate Ball E constructed of an ionomer blend of Iotek 7030 and 8000. Instead, the '510 application uses only the molded intermediate Ball D which is constructed out of Surlyn 1605 as the finished balls 4 and 5 in Table 8 which are the prior art balls taught in the Nesbitt. Thus, the '510 appears to lack a finished ball embodiment description constructed with an inner layer made from two ionomer blends with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness and an outer layer made of a polyurethane material with said claimed mechanical properties of Shore D hardness, flexural modulus and thickness. Instead, the '510 application discloses only a molded intermediate Ball E made from a 50/50 blend of two ionomers known as Iotek 7030 and 8000 as shown in Table IV (7) on pages 41-42.

7. The next application in the chain where the claimed invention could be adequately describe and enabled is application No. 08/542,793 ('793 application), which is a continuation-in-part to the '510 application. On page 39, the '793 application discloses:

"Top Grade" or "TG" is a low acid inner cover ionomer resin blend comprising 70.6% Iotek 8000, 19.9% Iotek 7010 and 9.6% white masterbatch.

This disclosure describes the claimed inner cover being of two low acid ionomer blends. However, the outer layer is described in the '793 application as consisting of ionomer resins and non-ionomeric thermoplastic elastomers and not polyurethane. Urethanes (polyurethane) include materials from the carbamate group, as well as other functional groups, such as ester, ether, amide and urea. Therefore, the inner layer claimed in the '293 patent is described and enabled on the date of filing of the '793 application which is Oct. 13, 1995, but not the outer layer claimed in the '293 Patent.

8. The next application in the chain where the claimed invention could be adequately described or enabled is application No. 08/556,237 ('237 application), which is a continuation-in-part to the '793 application. Page 46 describes a plurality of golf balls constructed of a mantle (core and inner layer) consisting of a blend of ionomers, Iotek 8030 and Iotek 7030, and outer layers consisting of Baytec RE832 which is a castable, thermoset polyurethane material. The claimed invention's outer layer requires the material to be a relatively soft polyurethane material. The material that is described in the disclosure that could meet the relatively soft polyurethane material is found on page 24, Estane X-4517. This material is not described as being used in any embodiment disclosed in the '237 application; although it has been concluded that one of ordinary skill in the art could make a finished golf ball embodiment of this material as an outer layer from reading the disclosure contained within the '237 application. Therefore, the claimed invention in the '837 patent appears adequately described in the '237 application. The '237 application has an filing date of Nov. 9, 1995.

9. Therefore, based on the above analysis regarding the disclosures of the parent applications of which the Sullivan '873 patent claims 35 U.S.C. § 120 benefit, the inventions claimed in claims 1-6 **the Sullivan '873 patent have a critical date for purposes of prior art patents and printed publications of Nov. 9, 1995.**

Substantial New Question vel non

10. The substantial new questions of patentability with respect to Nesbitt for claims 1-6 are based alone on patents and/or printed publications already cited/considered in an earlier concluded examination of the patent being reexamined. On November 2, 2002, Public Law 107-273 was enacted. Title III, Subtitle A, Section 13105, part (a) of the Act revised the reexamination statute by adding the following new last sentence to 35 U.S.C. 303(a) and 312(a):

The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

For any reexamination ordered on or after November 2, 2002, the effective date of the statutory revision, reliance on previously cited/considered art, i.e., "old art," does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based exclusively on that old art. Rather, determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis.

In the present instance, there exists a SNQ based alone on Nesbitt (USPN 4,431,193). Nesbitt alone was applied and is now being looked at in a new light. Proudfit, Molitor '637, Molitor '751, and Wu were cited and considered, but not applied. A discussion of the specifics now follows:

RE. CLAIM 1

1. Nesbitt alone and Nesbitt and Molitor '637 taken together

11. It is agreed that the consideration of Nesbitt alone or Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 1 of the Sullivan patent. As pointed out on pages 14-18 of the request, Nesbitt teaches a two piece golf ball having a solid core with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Nesbitt also teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt further teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as Estane 58133. There is a substantial likelihood that a review of the scientific literature would be needed to determine the Shore D hardness of Estane 58133. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt alone and Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone, is considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent. Further, Nesbitt and Molitor '637 taken together are considered to raise a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

12. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. The request on pages 18-20 of the request considers that Nesbitt alone teaches the use of a particular soft polyurethane material for use as the

outer layer 16. However, it should be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which issued as the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

13. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out on pages 20-22 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which

became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

14. It is further agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 1 of the Sullivan patent. The above explanation of the prosecution history of the Sullivan patent, taken with the analysis of the prosecution history of Proudfit set forth below, will lead to the conclusion that the Proudfit patent qualifies as a prior art patent under 35 U.S.C. § 102(b) thus raising a SNQ as to the claims of the Sullivan patent. Because Proudfit was utilized as a § 102(e) reference in a § 103(a) rejection against the claims in the parent application No. 08/870,585 as evidenced by the acceptance of a Rule 131 declaration withdrawing the Proudfit reference (see Paper #24, mailed 12-7-99), viewing the Proudfit patent as 35 U.S.C. §102(b) prior art that cannot be antedated under 37 CFR 1.131 is a consideration of the teachings in Proudfit in a "new light."

15. Proudfit has a filing date of Jun. 29, 1992 and is a continuation-in-part of Ser. No. 07/733,789, ('789 application) filed on Jul. 26, 1991, now abandoned. A review of the '789 application appears to not adequately describe and enable an invention of a golf ball having a solid core, an inner layer cover and an outer layer cover. Instead, the '789 application appears to describe and enable a golf ball with a solid core and a single cover layer; instead of the inner and outer cover layers shown in Proudfit's figures 1 and 2. Therefore, Proudfit's teachings of a golf ball having a solid core, an inner layer and outer layer has the effective filing date of Jun 29, 1992; the date of filing the Proudfit application which issued into the Proudfit patent. Proudfit issued on May 24, 1994. The

claimed inventions within the Sullivan '293 patent have the critical date of Nov. 9, 1995, more than one year after issuance of the Proudfit patent.

16. Thus, it is agreed as stated in the request on pages 22-25 that Proudfit teaches a three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.

Req. at page 22. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skilled in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22 teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression

value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a "deadening effect similar to balata covered balls" which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

17. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a "deadening effect" similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively

soft material. Thus, Molitor '637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

18. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on pages 26 and 27, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 26. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be acceptable to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover because it lacks the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan

patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

19. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 1 of the Sullivan patent. As pointed out in the request on pages 27-29 and as also discussed above, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 27. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata covered ball not because of the balata chemical composition itself, but because the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata covered ball, any material would be accepted to a golfer. As pointed out on pages 28 and 29 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not

the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 1, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 2

1. Nesbitt

20. It is agreed that consideration of Nesbitt raises a SNQ as to claim 2 of the Sullivan patent. Claim 2 depends directly from claim 1. Claim 2 limits the inner layer to about 0.050 inch thickness and the outer layer to about 0.055 inch thickness. As pointed out in the request on pages 29-30, Nesbitt teaches that a preferred embodiment has an outer layer of 0.0575 inch thickness. If the standard USGA golf ball has an overall minimum diameter of 1.680 inches and Nesbitt in col. 3:29 teaches that a preferred solid core plus inner thickness diameter is 1.565 inches, then Nesbitt inner layer thickness to match the preferred outer layer and solid core diameter in order to yield a total diameter of 1.680 inches would be about 0.0525 inches to be within the given inner layer range of between 0.020 to 0.070 inches. These teachings of viewing Nesbitt were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 2, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit in combination with other references

21. It is **not agreed** that Proudfit in combination with other references teach all of the limitations of claim 2. Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 2 requires the inner layer to be about 0.050 inches thick.

Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, a reasonable examiner would not consider this teaching important in deciding whether or not the claim is patentable. Thus, Proudfit in combination with the other references does not raise a SNQ with respect to claim 2.

RE. CLAIM 3

1. Nesbitt alone, and Nesbitt and Molitor '637 taken together

22. It is agreed that the consideration of Nesbitt alone, and consideration of Nesbitt and Molitor '637, each taken together raises a substantial new question of patentability (SNQ) as to claim 3 of the Sullivan. As pointed out in the request on pages 33-36, Nesbitt teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, as pointed out in the request, Nesbitt teaches the inner layer thickness being between 0.020 and 0.070 inches (Nesbitt, col. 3:19-23); the outer layer thickness being between 0.020 and 0.100 inches (Nesbitt, col. 3:22-25) and the minimum diameter of 1.680 inches (Nesbitt, col. 2:50-52). Nesbitt alone teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the

Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

"Reference is made to ... Molitor .. U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention".

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. Viewing the teachings of Nesbitt alone, it is clear that these teachings were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable

examiner would consider these teachings important in deciding whether or not the claim is patentable. Also, the teaching of Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone and Nesbitt and Molitor '637 taken together raise a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

23. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 3 of the Sullivan patent. The request on pages 36-38 considers Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of

patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

24. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 3 of the Sullivan patent. As pointed out on pages 38 and 39 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surllyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

25. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 3 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 40-43 that Proudfit teaches a

“three-piece [two-piece] solid golf ball that includes a core, a hard ionomer inner cover layer and a relatively soft outer cover layer made of a balata-based material.”

Req. at page 40. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core. Those skill in the art understand the term "two-piece ball" to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid spherical (see Proudfit's figures) core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 with dimples (again see Proudfit's figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. However, in an analogous golf ball Molitor '637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor '637 Example 16. One skilled in the art reading the specification learns from Molitor '637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart

motion on the ball when putting creating a “deadening effect similar to balata covered balls” which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750; compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

26. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a polyurethane material; moreover, a relatively soft polyurethane material as a cover layer to a solid core golf ball. This teaching as to the polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application which became the Sullivan

patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

27. It is agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 3 of the Sullivan patent. As pointed out in the request on pages 43 and 44, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 43. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id.* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly,

Proudfit taken with Wu raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

6. Proudfit taken with Molitor '751

28. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 3 of the Sullivan patent. As pointed out in the request on pages 45 and 46 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 45. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 48 and 49 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. These teachings of viewing Proudfit taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 3, which question has not been decided in a previous examination of the Sullivan patent.

RE. CLAIM 4

1. Nesbitt

29. It is agreed that consideration of Nesbitt raises a SNQ as to claim 6 of the Sullivan patent. Claim 4 is dependent upon claim 3. Claim 4 limits the inner and outer cover thickness to 0.050 inches and 0.055, respectively; and the overall diameter to be 1.680 inches or greater. As pointed out in the request on pages 47-48, Nesbitt teaches that a preferred embodiment has an outer layer of 0.0575 inch thickness. If the standard USGA golf ball has an overall minimum diameter of 1.680 inches and Nesbitt in col. 3:29 teaches that a preferred solid core plus inner thickness diameter is 1.565 inches, then Nesbitt inner layer thickness to match the preferred outer layer and solid core diameter in order to yield a total diameter of 1.680 inches would be about 0.0525 inches to be within the given inner layer range of between 0.020 to 0.070 inches. These teachings of viewing Nesbitt were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 4, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit

30. It is **not agreed** that Proudfit in combination with other references teach all of the limitation of claim 4. Proudfit's preferred embodiment's inner layer is 0.037 inches thick, see col. 7:43-44. Claim 4 requires the inner layer to be about 0.050 inches thick. Those skilled in the art measure thickness to the thousandths of an inch. The difference between the Proudfit preferred embodiment and the claimed invention is 0.013 inches or thirteen hundredths of an inch. This difference equates to a difference of a factor of ten. Further, the requester admits that it is not the chemical but the mechanical properties of the materials used in making golf balls important to those skilled in the art. One of the

mechanical properties in constructing a golf ball with materials is the thickness to make a given layer. Therefore, a reasonable examiner would not consider this teaching important in deciding whether or not the claim is patentable. Thus, Proudfit in combination with the other references does not raise a SNQ with respect to claim 4.

RE. CLAIM 5*1. Nesbitt alone, and Nesbitt and Molitor '637 taken together*

30. It is agreed that the consideration of Nesbitt alone and consideration of Nesbitt and Molitor '637 taken together raises a substantial new question of patentability (SNQ) as to claim 5 of the Sullivan. As pointed out in the request on pages 50-54, Nesbitt alone teaches a two piece golf ball having a solid core, figure 1 and col. 2:33 teach the core shaped as a sphere, with a cover including "an inner layer 14 of hard, high flexural modulus resinous material" and an "outer layer ... 16 of soft, low flexural modulus resin." See Nesbitt, col. 1:20-25. Moreover, the outer layer 16 is taught to be dimpled, see figures 1 and 2 and col. 2:48-49. Furthermore, Nesbitt teaches the inner layer is molded over the core to form an intermediate ball, see Nesbitt col. 2:34-37. Nesbitt alone teaches having the inner layer 14 of cellular or non-cellular hard, high flexural modulus resinous material of a thickness in the range of .020 to .070 inches; while having the outer layer 16 of cellular or non-cellular soft, low flexural modulus resinous material of a thickness in a range of .020 and .100 inches. Nesbitt alone teaches a suitable material for the inner layer 14 being a thermoplastic resin designated Surlyn 1605. The Sullivan patent admits Surlyn 1605 is now designated Surlyn 8940, see col. 2:55. Further, the Sullivan patent contains an admission that Surlyn 8940 is a hard, high flexural modulus resinous material, see col. 2:54. Also, Nesbitt alone teaches a suitable material for the outer layer 16 is a thermoplastic resin designated Surlyn 1855. The Sullivan patent also contains an admission that Surlyn 1855 is now designated Surlyn 9020, see col. 2:63. Further, the Sullivan patent admits Surlyn 9020 is a soft, low flexural modulus resinous material. Moreover, the Sullivan patent admits in Table 1, found in col. 8, the "typical properties of commercially available Surlyn resins". In Table 1, found in col. 8, the Sullivan patent admits Surlyn 8940 has a flexural modulus of 51,000 psi. Also, in this table Surlyn 8940 is listed as having Shore D hardness is 66. Furthermore, Nesbitt refers to Molitor '637 as a source for potential cellular compositions that may be employed in the inner and outer layers 14 and 16 of golf ball 12 taught in Nesbitt.

Reference is made to ... Molitor ... U.S. Pat. No. 4,274,637 which describes a number of foamable [cellular] compositions of a character which may be employed for one or both layers 14 and 16 of the golf ball of this invention.

Molitor '637 lists examples of solid core golf balls covered with a blend of two compositions of Surlyn, one of which is Surlyn 1605 and an example of using a polyurethane as a cover over the solid core, see Tables 2, 3, 4, 5, and 10. Molitor '637 teaches that the average thickness of the layer covering the solid core is 0.090 inches. Molitor '637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. There is a substantial likelihood that review the technical properties of the polyurethane used in Molitor '637 would be needed via product information sheets or the like. Nesbitt teaches the inner, intermediate or first layer 14 on the core 12 may be slightly foamed to a low degree so as not to materially affect the coefficient of restitution of the material. Nesbitt teaches the outer or cover or second layer 16 may be foamed to a greater degree than the inner layer 14 as the material of the layer 16 is comparatively soft. Nesbitt teaches the inner layer 14 may be unfoamed or noncellular and the outer layer may be cellular or foamed resin or vice versa. Nesbitt teaches through the use of foamable material for the first layer 14, the cover layer 16 or both layers, the degree of foaming or one or the other or both layers may be altered to provide a variation in the coefficient of restitution of the golf ball. These teachings of viewing Nesbitt alone and Nesbitt and Molitor '637 taken together were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt alone and Nesbitt and Molitor '637 taken together raise a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

2. Nesbitt taken with Wu

31. It is agreed-in-part that the consideration of Nesbitt taken with Wu raises a SNQ as to claim 5 of the Sullivan patent. The request on pages 54-56 considers Nesbitt alone teaches the use of a particular soft polyurethane material for use as the outer layer 16. However, a closer reading of Nesbitt teaches that Nesbitt references the covers taught Molitor '637 can be used as materials for the covers taught in Nesbitt. See Nesbitt, col. 3:56-60. Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that Surlyn covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Nesbitt mentioning Molitor '637 taken with Wu were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt mentioning Molitor '637 taken with Wu raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

3. Nesbitt taken with Molitor '751

32. It is agreed that the consideration of Nesbitt taken with Molitor '751 raises a SNQ as to claim 5 of the Sullivan patent. As pointed out on pages 57 and 58 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece

golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, a reasonable examiner would have to review the chemical literature to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Nesbitt taken with Molitor '751 were not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Nesbitt taken with Molitor '751 raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

4. Proudfit taken with Molitor '637

33. It is agreed that the consideration of Proudfit taken with Molitor '637 raises a SNQ as to claim 5 of the Sullivan patent. The explanation of how Proudfit constitutes a prior art patent is discussed above at item 15 and incorporated herein. It is agreed as stated in the request on pages 58-61 that Proudfit teaches a

three-piece [two-piece] solid golf ball that includes a core,
a hard ionomer inner cover layer and a relatively soft outer
cover layer made of a balata-based material.

Req. at page 58. See Proudfit, Abstract and col. 5:43-52. The examiner is making an editorial note to the request's statement regarding a "three-piece" ball. Those skilled in the art understand the term "three-piece ball" to constitute a small solid or liquid inner core with a wound core around the inner core and a cover secured to the wound core.

Those skill in the art understand the term “two-piece ball” to constitute a large solid core with a cover layer secured to the core. This cover layer can either constitute one or multiple layers. For instance, Proudfit as correctly quoted in the request on page 22, as pointed out above in this decision, teaches a golf ball having a two-layer cover, see Proudfit col. 1:11-12. It is agreed that Proudfit teaches a two-piece golf ball 10 which includes a solid core 11 (spherical see figures) and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 (with dimples see figures) of polymeric material as taught in col. 7:21-24. Table 6 in Proudfit shows the inner layer being ionomer blend of Surlyn 8940 and Surlyn 9910 which are low acid ionomer resins of alpha, beta-unsaturated carboxylic acid. As admitted in the Sullivan patent in Table 1 on col. 8, Surlyn 8940 has a flexural modulus of 51,000 psi. Proudfit in column 7, lines 37-44, teaches the inner layer is preferable 0.037 inches thick. Proudfit in column 5, lines 15-17 teaches the outer layer being either balata or a blend of balata and other elastomers. Proudfit in column 7, lines 40-46, teaches the outer layer thickness preferably being 0.0525 inches. Proudfit lacks in teaching the outer cover being made of a relatively soft polyurethane material. Although, Proudfit teaches that its soft elastomer material as a flexural modulus in the range of about 20,000 to 25,000 psi, see col. 6:28-31. However, in an analogous golf ball Molitor ‘637 teaches the use of a polyurethane material as the outer layer, that material being Estane 58133, see col. 18 of Molitor ‘637 Example 16. One skilled in the art reading the specification learns from Molitor ‘637 that: 1) a higher coefficient of restitution (COR) means a more elastic collision and the farther the ball will travel when struck by the club face (USGA permits a maximum COR of 0.795 for a finished ball); 2) high compression value on a Riehle machine equates to a finished golf ball having better spin control characteristics when struck by the club face because more of the ball contacts the ridges on the club face which imparts the back spin on the ball; and 3) the lower the rebound distance equates to more force need to impart motion on the ball when putting creating a “deadening effect similar to balata covered balls” which has been shown to decrease margins of error while putting, thus making a more forgiving ball to putt. See col. 6:28-65 and col. 9:19-35. In Example 16, the coefficient of restitution (COR) was 0.750;

compression (COMP) 95; and rebound distance (RD) 66 inches. The below table lists the COR, compression (COMP) and rebound distance (RD) for all finished balls having the solid center C described in col. 12:47-48.

Example	COR	Compression	Rebound Distance (in)
3	0.785	110	70
8	0.734	105	64
10	0.719	110	66
12	0.756	85	61
14	0.778	100	69
16	0.750	95	66
18	0.783	95	77
20	0.730	95	58
21	0.715	98	65

34. Example 18 is taught as having its cover made from a polyurethane material, see col. 18:63 through col. 19:2. Comparing Example 16 to Example 18 teaches Example 16 has a lower COR and lower rebound distance; which teaches the polyurethane material of example 16 is less elastic, i.e. more inelastic, and more of a “deadening effect” similar to a balata covered ball. Balata is known in the art to be a soft material because it is similar to rubber; therefore it follows that the polyurethane material in Example 16 is a relatively soft material. Thus, Molitor ‘637 teaches using a relatively soft polyurethane material as a cover layer to a solid core golf ball. However, Molitor ‘637 lacks teaching the actually flexural modulus of the polyurethane used in covering the solid core. Thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material used in Molitor ‘637. This teaching as to the relative soft polyurethane material as a substitute for the outer cover layer of Proudfit was not present in the prosecution of the application

which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '637 raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

5. Proudfit taken with Wu

35. It agreed that the consideration of Proudfit taken with Wu raises a SNQ as to claim 5 of the Sullivan patent. As pointed out in the request on pages 63-64, Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 63. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As taught in Wu, Surlyn was once tried as a cover material because golf ball manufacturers were impressed with its durability, see Wu col. 1:36-46. However, golfers do not like a Surlyn cover for the cover lacked the "click" and "feel" which golfers had become accustomed to with balata. *Id* Thus, Wu proposes employing a polyurethane material as a cover layer for a golf ball. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. Wu lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Wu. These teachings of viewing Proudfit taken with Wu were not present in the prosecution of the application which became the Sullivan patent.

Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Wu raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

6 Proudfit taken with Molitor '751

36. It agreed that the consideration of Proudfit taken with Molitor '751 raises a SNQ as to claim 5 of the Sullivan patent. As pointed out in the request on pages 64 and 65 and as also discussed above Proudfit teaches a golf ball having a multi-layer cover that is constructed from a hard, ionomeric inner cover layer and a soft balata outer cover layer. Req. at 64. As known in the art, balata covered balls have durability problems. However, golfers prefer the balata cover ball not because of the balata chemical composition itself; but the material provides a certain "click" and "feel" to the golfer upon a golf swing. What gives a golf ball a certain "click" and "feel" are the mechanical properties associated with the material being used in the manufacture of the ball's cover. So long as the golf ball has a "click" and "feel" similar to a balata cover ball; any material would be accepted to a golfer. As pointed out on pages 69 and 70 of the request, Molitor '751 explains the advantages of using a soft polyurethane material on a two-piece golf ball, see col. 2:61-68. Molitor '751 teaches the material consists of a blend of a thermoplastic urethane having a Shore A hardness of 95 or less and an ionomer having a Shore D hardness of 55 or more, see col. 2:38-42. Molitor '751 teaches an embodiment in the TABLE spanning across columns 7 and 8 having a blend of Texin 480 AR (the urethane) and Surlyn 1605 (the ionomer) having a Shore C hardness of 73. There is a substantial likelihood that review of the scientific literature would be needed to equate the Shore D hardness to the Shore C of this blend. Molitor '751 lacks in teaching the specific flexural modulus of the taught polyurethane; thus, there is a substantial likelihood that a review of the mechanical characterization literature would be needed to determine the flexural modulus of the taught polyurethane material in Molitor '751. These teachings of viewing Proudfit taken with Molitor '751 were not present in the

prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not the claim is patentable. Accordingly, Proudfit taken with Molitor '751 raises a substantial new question of patentability as to claim 5, which question has not been decided in a previous examination of the Sullivan patent.

CLAIM 6

1. Nesbitt

37. It is agreed that consideration of Nesbitt raises a SNQ as to claim 6 of the Sullivan patent. Claim 6 depends from claim 5 and limits the inner layer having a higher Shore D hardness than the outer layer. As pointed out in the request on pages 66-67, Nesbitt teaches a first layer of molded hard, high flexural modulus resinous material under a second layer of soft, low flexural modulus resinous material, see e.g. Nesbitt's abstract. This teaching of Nesbitt was not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or not the claim is patentable. Accordingly, Nesbitt raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

2. Proudfit

38. It is agreed that consideration of Proudfit raises a SNQ as to claim 6 of the Sullivan patent. Claim 6 depends from claim 5 and limits the inner layer having a higher Shore D hardness than the outer layer. As pointed out in the request on page 67, Proudfit teaches an inner layer formed from hard resin material and an outer layer formed from a soft material. This teaching of Proudfit was not present in the prosecution of the application which became the Sullivan patent. Further, there is a substantial likelihood that a reasonable examiner would consider this teaching important in deciding whether or

not the claim is patentable. Accordingly, Proudfit raises a substantial new question of patentability as to claim 6, which question has not been decided in a previous examination of the Sullivan patent.

Summary of SNQs Adopted and Not Adopted

Requester's SNQs Adopted

39. For Claim 1 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.
40. For Claim 2 of the Sullivan patent:
 - (1) Nesbitt.
41. For Claim 3 of the Sullivan patent:
 - (1a) Nesbitt alone.
 - (1b) Nesbitt and Molitor '637 taken together.
 - (2) Nesbitt and Wu taken together.
 - (3) Nesbitt and Molitor '751 taken together.
 - (4) Proudfit and Molitor '637 taken together.
 - (5) Proudfit and Wu taken together.
 - (6) Proudfit and Molitor '751 taken together.
42. For Claim 4 of the Sullivan patent:
 - (1) Nesbitt.

43. For Claim 5 of the Sullivan patent:

(1a) Nesbitt alone.

(1b) Nesbitt and Molitor '637 taken together.

(2) Nesbitt and Wu taken together.

(3) Nesbitt and Molitor '751 taken together.

(4) Proudfit and Molitor '637 taken together.

(5) Proudfit and Wu taken together.

(6) Proudfit and Molitor '751 taken together.

44. For Claim 6 of the Sullivan patent:

(1) Nesbitt.

(2) Proudfit in combination with other references.

Requester's SNQs Not Adopted

45. For Claim 2 of the Sullivan patent:

(2) Proudfit in combination with other references.

46. For Claim 4 of the Sullivan patent:

(2) Proudfit in combination with other references.

Office Action on the Merits

47. An Office action on the merits does not accompany this order for *inter partes* reexamination. An Office action on the merits will be provided in due course.

Application/Control Number: 95/000,123

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Art Unit: 3993

Conclusion

All correspondence relating to this *inter partes* reexamination proceeding should be directed:

Please mail any communications to:

Attn: Mail Stop "Inter Partes Reexam"
Central Reexamination Unit
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Please FAX any communications to:

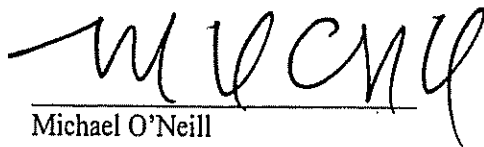
(571) 273-9900
Central Reexamination Unit

Please hand-deliver any communications to:

Customer Service Window
Attn: Central Reexamination Unit
Randolph Building, Lobby Level
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:



Michael O'Neill
CRU Examiner
AU 3993


CONF: 

EXHIBIT E

PATENT SPECIFICATION (11) 1 515 196

- 1 515 196 (21) Application No. 423075 (22) Filed 15 Oct. 1975 (19)
 (31) Convention Application No. 525970 (32) Filed 21 Nov. 1974 in
 (33) United States of America (US)
 (44) Complete Specification Published 21 Jun. 1978
 (51) INT CL² A63B 45/00 37/12
 (52) Index at Acceptance
 A6D 1A 1C5 1C7
 B5A 1R214H 1R314C2X 1R314C5 1R322
 1R405 20T1 20T20 20T3 20T9 A1
 C3R 32A 32E12 32E2A 32E2B 32E2Y 32E3B
 32E3C1 32E3C2 32E3Y 32E6 32G2Y
 32J10 32J1Y 32J2Y 32KK



(54) POLYURETHANE COVERED GOLF BALLS

(71) We, ACUSHNET COMPANY, a corporation of the Commonwealth of Massachusetts, United States of America, having its offices at Belleville Avenue, New Bedford, Massachusetts 02742, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

The present invention relates to polyurethane covered golf balls and particularly to a process for making same which is commercially viable.

There has been much work recently in the field of golf ball covers to make them more durable and less expensive but still have good click and feel. One of the primary reasons for this is that the price of balata, the principle cover stock for golf balls, has recently become prohibitive except for the most high priced balls. Even for the high priced balls, the cost of balata is causing shrinking profits and substitutes are being sought.

One of the most popular substitute materials is a resin sold under the trademark Surlyn by DuPont. The advantage of the Surlyn material is that it is considerably less expensive than balata and has greater cut resistance thus being quite acceptable to "duffers." The disadvantage to the Surlyn resins is that they are lacking considerably in click and feel and are consistently disliked by professional golfers and the better amateur golfers.

One cover material which has been looked at as a substitute for balata or Surlyn resin is polyurethane. The great advantage to polyurethane is that it combines relatively low price with the good cut resistance of Surlyn resin and the good click and feel of balata. The disadvantage to polyurethane is that it is a thermosetting material and is very

difficult to process as a golf ball cover.

Various attempts have been made to use thermosetting polyurethane resins for golf ball covers. To date, however, none of these has been commercially viable. By this it is meant that the covers can be made but it is a very involved procedure and cannot be used in a commercial production line. For example, United States Patent No. 3,130,102 discloses a process for making a ball half shell by partially curing a polyurethane prepolymer and then interrupting the cure by cooling the half shell. A single prepolymer and curing agent are used. While this process may be viable in the laboratory, it is very difficult, if not impossible, to use on a large scale basis since it is extremely difficult to stop a reaction in the middle by freezing at exactly the same point each time. If there are permitted to be differences in the point of freezing, then the golf balls formed will have varying properties, a highly undesirable result.

According to one aspect of the present invention, there is provided a golf ball comprising a core and a cover surrounding said core, said golf ball being made by a method comprising the steps of:-

- (a) admixing two urethane prepolymers and a curing agent (as hereinafter defined) which will cure each of said urethane prepolymers at a different reaction rate under a given set of reaction conditions;
- (b) pouring said mixture to form a slab;
- (c) permitting the reaction between said curing agent and that one of said urethane prepolymers with which said curing agent reacts at a faster rate to go to substantial completion;
- (d) cutting the partially cured slab so formed into half shell blanks;
- (e) forming golf ball half shells;
- (f) placing two said golf ball half shells about a golf ball core; and
- (g) further curing said golf ball half shells

about said golf ball core by effecting reaction between said curing agent and the other of said urethane prepolymers

According to another aspect of the invention, there is provided a golf ball comprising a core and a cover surrounding said core, said golf ball being made by a method comprising the steps of:-

(a) admixing a urethane prepolymer with two curing agents (as hereinafter defined) each of which will cure said urethane prepolymer at a different reaction rate under a given set of reactions conditions;

(b) pouring said mixture to form a slab;

(c) permitting the faster reaction between said urethane prepolymer and one of said curing agents to go to substantial completion;

(d) cutting the partially cured slab so formed into half shell blanks;

(e) forming golf ball half shells;

(f) placing two such golf ball half shells about a golf ball core; and

(g) further curing said golf ball half shells about said golf ball core by effecting a reaction between said urethane prepolymer and the other of said curing agents.

The term "curing agent" as used herein is intended to refer to not only a compound having functional groups which will react with a specific urethane precursor at one reaction rate under specified conditions, e.g., a polyol, but also to each of the functional groups of a single compound having two or more different such groups, each of which will react with a specific urethane precursor at a different rate under the same reaction conditions.

Thus, in accordance with the present invention, there is disclosed a new and useful process for making golf ball covers and compositions for effecting the same. The process comprises using materials having varying reaction rates so that one reaction can be carried to substantial completion in forming the cover half shell and then a second reaction can be carried out to cure the cover about the golf ball core. Variation of the reaction rates is effected by using at least a three reactant system. For example, two polyurethane prepolymers can be used with a single curing agent or one polyurethane prepolymer can be used with two curing agents. It will be understood that the

minimum number of reactants is three. There is no maximum other than practical considerations. For example, one could use a mixture of two polyurethane prepolymers with a mixture of two curing agents if desirable. Alternatively, one might use three polyurethane prepolymers with a single curing agent or a single polyurethane prepolymer with three or more curing agents. The essential feature is that the rates of reaction are different under the same reaction conditions. For example, if polyurethane prepolymer A is used with curing agents B and C then the rate of reaction of curing agent B with polyurethane prepolymer A must be different from the rate of reaction of curing agent C with polyurethane prepolymer A.

The particular polyurethane prepolymers and curing agents selected are not critical so long as a selection is made which results in components having at least two different rates of reaction. With respect to the prepolymer, it is possible to use any two diisocyanates which have different rates of reaction with the selected curing agent. However, we much prefer, where a multiple prepolymer system is used, to have at least one aromatic diisocyanate and one aliphatic diisocyanate. The reason for this is that the aromatic diisocyanate will have a rate of reaction which is much greater (order of magnitude up to 100 times or even higher) than the aliphatic diisocyanate no matter what is selected as the curing agent. With respect to the curing agent for the multiple prepolymer system, any curing agent can be used which will cure each of the prepolymers, for example a di-, tri-, or tetrafunctional polyol, or an amine type curing agent having at least two reactive sites.

Where a multiple curing agent system is used, it is necessary to select curing agents which have different rates of reaction with respect to the prepolymer system employed. Generally only a single prepolymer will be used although it will be understood that mixtures of prepolymers may be employed if desired. It is generally true that no matter what prepolymer is employed, the rates of reaction of the following typical curing agents will be in the order shown with the fastest being listed first and the slowest being listed last:

55 TYPES OF CURING AGENT

unhindered amine, preferably aromatic

hindered amine

60 primary polyol

secondary polyol

tertiary polyol

65 aromatic polyol

EXAMPLE

methylene dianiline (MDA)

5. 5' methylene-bis- (methyl anthranilate)

1, 5-butanediol

2, 3-butanediol

2, 3-dimethyl-2, 3-butanediol

hydroquinone

Hindered aromatic polyols can also be used. One skilled in the art will, of course, recognize that any one of the above may be moved down on the list by slowing the reaction rate such as by steric or electronic hindrance as for example by adding a halogen atom in the ortho position to the amine group in an aromatic amine curing agent.

Similarly, one could vary reaction rates by "blocking" any of the above compounds so that it only reacts at a relatively fast rate above a specified temperature, although below this temperature, reaction will take place but at a very much slower rate. For example, Caytur, a blocked methylene dianiline available from DuPont, will only react at a relatively fast rate at temperatures above 220°F. Thus straight methylene dianiline can be used as the fast curing agent and blocked methylene dianiline can be used as the slow curing agent. The first reaction in step (c) with the straight methylene diamine would be effected at below suitably 200°F, and the second reaction in step (g) would be carried out at temperatures above 220°F.

It is also possible in a multiple curing agent system to select two of the same types of curing agents, e.g., two primary polyols having different reaction rates, but it is much preferred to select the curing agents from at least two different groups since there will then be obtained a greater difference in rate of reaction.

As previously stated, it is possible to incorporate the two different curing agents into a single compound as different functional groups thereof. A typical example of such a compound would be a difunctional compound wherein one of the functional groups is from one of the curing agent classes and the other functional group is from the other curing agent class, e.g., a compound which is both amino and hydroxy substituted.

In carrying out the present invention, the at least three selected reactants (two prepolymers and one curing agent or one prepolymer and two curing agents) are preferably admixed at elevated temperatures, poured into a slab and then the initial reaction (the faster of the two reactions) is allowed to go to substantial completion. This can take from under one minute up to 48 hours or more depending upon the particular components and temperatures selected. If the two components are different enough in reaction rates, then their processing can be carried out without any intermediate steps. If, on the other hand, the reaction rates are quite close, then it is desirable to freeze the slabbed composition after substantial completion of the first reaction in order to prevent the second reaction from progressing unduly before processing

can be completed.

The slabbed material, whether frozen or not, is preferably cut into blanks of approximately one inch by one inch after which a cover half shell is formed by compression molding in known manner. Enough heat and time are used to give a half shell that will hold its shape. The half shell is then removed from the mold (with cooling of the mold if necessary) after which it is either immediately molded about a ball or stored for future use. Depending upon the particular reactants selected, the half shell can be maintained at ambient temperature for up to 48 hours or more. Alternatively, if the half shell is not to be molded about a ball within the time that the second reaction (the slower reaction) would unduly progress, then the half shell can be frozen for later use.

When used, two half shells are placed about a golf ball core in known manner and the cover is then compression molded about the core. This final compression molding step, which is well known in the art, bonds the two half shells together and also results in formation of dimples in the cover due to the fact that the molds employed have dimple negatives. It is not necessary that the second reaction be carried to completion during this final molding process. Quite the contrary, it is only necessary that the final molding be of sufficient heat and time to adhere the two half shells to each other and to impress the dimples. Thereafter, the balls can be removed from the mold and be post cured, either at ambient or elevated temperature, until the second reaction goes to substantial completion. While this is the preferred process of the present invention, it will be understood that the final cure could be carried to completion in the golf ball mold if desired.

The core used with the golf ball of the present invention may be any core which is suitable for use in a golf ball. It may be a solid core such as the composition disclosed in United States Patent No. 3,791,655 or it may be a standard wound core. One of the great advantages of polyurethane covers made in accordance with the instant invention is that they may be made very thin which is highly desirable both from a cost point of view and a golfing point of view. Because of USGA regulations, virtually all golf balls made in the United States (except those for export) have a diameter of about 1.68 inches. With the cover composition of the present invention, the core may be made up to about 1.63 inches, leaving a cover of approximately 0.025 inches in thickness. There is no limitation on how thick the cover of the present invention may be but it is generally preferred to have a core of at least 0.5 inches in diameter so that the cover

is no more than about 0.6 inches in thickness.

The following examples illustrate the present invention:

5 EXAMPLE 1

This example demonstrates the present invention using a multiple prepolymer system with a single curing agent. Urethane prepolymer LD-2832 was used as the fast reacting urethane prepolymer. This prepolymer is a polyether aromatic diisocyanate with an available NCO content of 4.5% and is available from DuPont. 30 parts by weight of this prepolymer were employed.

Urethane prepolymer LW-520 was used as the slow reacting urethane prepolymer. This prepolymer is an aliphatic diisocyanate having an available NCO content of 4.5% and is also available from DuPont. 70 parts by weight of this prepolymer were employed.

As the curing agent for this system, there can be employed any of the various known urethane curing agents such as MOCA (3, 3'-dichloro 4, 4' diamino diphenyl methane), a diol, triol, tetraol, triamine, etc. The actual curing agent employed was methylene dianiline (MDA) and it was used in the amount of 14 parts.

While the specific example employed was for illustrative purposes and used only the two prepolymers and the single curing agent as set forth hereinbefore, it will be understood that other ingredients could be included in the cover material such as catalysts, colorants, ultraviolet light absorbers, plasticizers, mold release agents, fillers, water scavengers, reinforcing agents, etc. For example, the inclusion of up to about 10% by weight of titanium dioxide is preferred since it imparts good color to the ball.

The selected parts of aromatic and aliphatic diisocyanates should be such as to permit further molding processing after completion of the initial reaction while at the same time allowing the stock to be mixed before the initial reaction. It is pointed out in this regard that some materials react so rapidly that they prevent effective mixing of the ingredients. Generally there should be employed from about 5% to about 95% of the aromatic diisocyanate with from about 95% to about 5% of the aliphatic diisocyanate.

The selected ingredients were heated at about 215°F. and were then degassed. Thereafter, the ingredients were combined and mixed for about five minutes employing an air driven mixer. The admixture was poured out into a slab of approximately 0.25 inches in thickness and the initial reaction of methylene dianiline with urethane prepolymer LD-2832 was permitted to go substantially to completion. This took approximately twenty minutes. Thereafter, the

sheet was frozen to below 0°F. to substantially prevent the reaction of the curing agent with the LW-520. Blanks of approximately one inch by one inch were cut and were compression molded in known manner to form golf ball half shells. A temperature of 100°C. was employed and a molding time of 1 minute was used. This was found to be sufficient to give a half shell that would hold its shape, which is the necessary requirement of this step. The mold was cooled with ice water of approximately 32°F. and the half shells were released. Thereafter, the half shells were frozen for storage. A series of golf balls were subsequently made by in each case placing two half shells in a golf ball mold with a standard wound core of about 1.63 inches in diameter placed therebetween. The half shells were compression molded about the core at 260°F. for five and one-half minutes. This was found sufficient to join the two half shells to each other and to impress the dimples in the cover. Depending upon the particular prepolymers and curing agents employed, the curing temperature can be from about 180°F. to 310°F. for a period of from about one minute to about twenty four hours. After molding in the golf ball mold, the balls were removed from the mold and allowed to post cure at ambient temperature for two weeks.

The thus formed golf balls were compared to a high grade wound ball having a balata cover and to a high grade wound ball having a Surlyn cover. The balls were found to have cut resistance comparable to the Surlyn covered balls and were found to have even greater abrasion resistance than the Surlyn covered balls. While having these very good cut resistance and abrasion characteristics the balls also had click and feel properties which were comparable to those of the balata covered ball. When driven with a wood type golf club, the feel was found to be virtually identical to that of a balata covered ball while the click was found to be equal to or better than the click of the balata covered ball.

EXAMPLE 2

This example demonstrates the use of multiple curing agents with a single urethane prepolymer.

The urethane prepolymer employed was LW-520, an aliphatic diisocyanate available from DuPont. It will be understood that while a single aliphatic prepolymer was employed, a mixture of prepolymers could be employed. As the fast curing agent there was employed methylene dianiline at 60% of theory. This worked out to about nine parts per 100 parts of LW-520 prepolymer. Methylene dianiline is an unhindered amine-type curing agent.

Curene 158 was used as the slow curing

agent. Curene 158 is a hindered amine, more particularly, 5, 5'-methylene bis(methyl anthracilate) available from Anderson Development Company. 35% of theory of Curene 158 was employed which worked out to about six parts by weight. Because the reaction between the selected curing agents and the selected prepolymer is quite slow, one part of stannous octoate was also used in the formulation as a catalyst.

The ingredients were melted, degassed and mixed as in the previous example whereafter they were poured into a slab of approximately 0.25 inches in thickness and allowed to stand for one hour at ambient temperature to permit the first reaction, i.e., the reaction between methylene dianiline and urethane prepolymer LW-520 to go to substantial completion. Since the secondary reaction, i.e., the reaction between Curene 158 and urethane prepolymer LW-520 is such a slow reaction as compared to the primary reaction, it is not necessary to employ any cooling or freezing steps with this composition unless it is desired to store it for more than 48 hours. One inch by one inch squares were cut from the stock and golf ball half shells were made by compression molding the cut pieces at 100°C. for two minutes. The mold was cooled for demolding the half shells whereafter the half shells were suitable for use in making a golf ball cover. A number of golf balls were made up in standard manner in each of which two half shells were compression molded about a standard golf ball core of about 1.63 inches in diameter. The covers were compression molded at about 240°F. for a five and one-half minute cycle. Thereafter, the balls were removed and allowed to post cure for at least two weeks and preferably two months. It was noted that in removing these balls from the molding machine they were quite soft and care had to be taken in handling them. This can be readily overcome by increasing the cure cycle to, for example, ten - twelve minutes. Balls made in accordance with this example were compared to both Surlyn covered balls and balata covered balls. As in the previous example, the balls were found to have cut resistance as good as the Surlyn covered balls and abrasion resistance greater than the Surlyn covered balls while at the same time having the good click and feel of balata covered balls.

WHAT WE CLAIM IS:-

1. A golf ball comprising a core and a cover surrounding said core, said golf ball being made by a method comprising the steps of:-

(a) admixing two urethane prepolymers and a curing agent (as hereinbefore defined) which will cure each of said urethane pre-

polymers at a different reaction rate under a given set of reaction conditions;

(b) pouring said mixture to form a slab;
(c) permitting the reaction between said curing agent and that one of said urethane prepolymers with which said curing agent reacts at a faster rate to go to substantial completion;

(d) cutting the partially cured slab so formed into half shell blanks;

(e) forming golf ball half shells;
(f) placing two said golf ball half shells about a golf ball core; and

(g) further curing said golf ball half shells about said golf ball core by effecting reaction between said curing agent and the other of said urethane prepolymers.

2. A golf ball as claimed in Claim 1, wherein one of the urethane prepolymers is an aromatic diisocyanate and the other of said urethane prepolymers is an aliphatic diisocyanate.

3. A golf ball as claimed in Claim 1 or Claim 2, wherein said curing agent is a difunctional, trifunctional or tetrafunctional polyol or an amine-type curing agent having at least two reactive groups.

4. A golf ball comprising a core and a cover surrounding said core, said golf ball being made by a method comprising the steps of:-

(a) admixing a urethane prepolymer with two curing agents (as hereinbefore defined) each of which will cure said urethane prepolymer at a different reaction rate under a given set of reaction conditions;

(b) pouring said mixture to form a slab;
(c) permitting the faster reaction between said urethane prepolymer and one of said curing agents to go to substantial completion;

(d) cutting the partially cured slab so formed into half shell blanks;

(e) forming golf ball half shells;
(f) placing two such golf ball half shells about a golf ball core; and

(g) further curing said golf ball half shells about said golf ball core by effecting a reaction between said urethane prepolymer and the other of said curing agents.

5. A golf ball as claimed in Claim 4, wherein the curing agents are selected from the groups:-

unhindered amines,
hindered amines,
primary polyols,
secondary polyols,
tertiary polyols,
aromatic polyols, and
hindered aromatic polyols,

one of said curing agents being from one of said groups and the other of said curing agents being from another of said groups.

6. A golf ball as claimed in Claim 4, wherein said two curing agents are consti-

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tuted by different functional groups present
in a single compound.

7. A golf ball prepared by a method as
hereinbefore described in Example 1 or
5 Example 2.

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EXHIBIT F



US005334673A

United States Patent [19]**Wu**[11] **Patent Number:** **5,334,673**[45] **Date of Patent:** **Aug. 2, 1994**[54] **POLYURETHANE GOLF BALL**[75] **Inventor:** Shenshen Wu, North Dartmouth, Mass.[73] **Assignee:** Acushnet Co., Fairhaven, Mass.[21] **Appl. No.:** 814,081[22] **Filed:** Dec. 24, 1991**Related U.S. Application Data**

[63] Continuation of Ser. No. 556,905, Jul. 20, 1990, abandoned.

[51] **Int. Cl.⁵** **A63B 37/12**[52] **U.S. Cl.** **273/235 R; 260/998.14; 524/874; 524/908; 524/875; 525/453**[58] **Field of Search** **525/453; 524/908, 874; 260/998.41; 273/235 R**[56] **References Cited****U.S. PATENT DOCUMENTS**

3,130,102 4/1961 Watson et al. 273/235
 3,989,568 11/1976 Isaac 528/65
 5,006,297 4/1991 Brown et al. 264/234

Primary Examiner—Ralph H. Dean*Attorney, Agent, or Firm*—Pennie & Edmonds[57] **ABSTRACT**

The golf ball is made from a composition of a polyurethane prepolymer and a slow-reacting polyamine curing agent and/or a difunctional glycol. The slow-reacting polyamine curing agents and difunctional glycols are 3,5-dimethylthio-2,4-toluenediamine; 3,5-dimethylthio-2,6-toluenediamine; N,N'-dialkyldiamino diphenyl methane; trimethyleneglycol-di-p-aminobenzoate; polytetramethyleneoxide-di-p-aminobenzoate; 1,4-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol; ethylene glycol; and mixtures thereof.

11 Claims, No Drawings

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POLYURETHANE GOLF BALL

This is a continuation of application Ser. No. 07/566,905 filed Jul. 20, 1990, now abandoned.

The present invention relates to golf balls and more particularly to polyurethane covered golf balls made from a polyurethane composition of a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents and difunctional glycols. Such a golf ball has improved resiliency and shear resistance over golf balls made from conventional polyurethane formulations.

Conventionally, golf balls are made by molding a cover about a core that is either a solid one-piece core or a wound core made by winding thin elastic thread about a center. The center is either a solid mass or a liquid-filled envelope which has been frozen prior to winding the thread therearound. Golf balls made from a solid core are referred to conventionally as two-piece balls while those with wound cores are referred to as three-piece balls. Attempts have been made to make a one-piece golf ball, i.e. a solid homogeneous golf ball; however, to date no commercially acceptable one-piece golf ball has been made.

Balata had been used as the primary material for covers of golf balls until the 1960's when SURLYN®, an ionomeric resin made by E.I. duPont de Nemours & Co., was introduced to the golf industry. SURLYN® costs less than balata and has a better cut resistance than balata. At the present time, SURLYN® is used as the primary source of cover stock for two-piece golf balls. The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound made when the ball is hit by a golf club while "feel" is the overall sensation imparted to the golfer when the ball is hit.

It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata.

Polyurethane is the product of a reaction between a polyurethane prepolymer and a curing agent. The polyurethane prepolymer is a product formed by a reaction between a polyol and a diisocyanate. The curing agent is either a diamine or glycol. A catalyst is often employed to promote the reaction between the curing agent and the polyurethane prepolymer.

Conventionally, there are two categories of polyurethane on the market, thermoset and thermoplastic. Thermoplastic polyurethanes are made from a diisocyanate, such as 4,4'-diphenylmethane diisocyanate (MDI) or 3,3'-dimethyl-4,4'-biphenylene diisocyanate (TODI), and a polyol cured with a diol, such as 1,4-butanediol. Thermoset polyurethanes are made from a diisocyanate, such as 2,4-toluene diisocyanate (TDI) or methylenebis-(4-cyclohexyl isocyanate) (HMDI), and a polyol which is cured with a polyamine, such as methylenedianiline (MDA), or a trifunctional glycol, such as trimethylol propane, or tetrafunctional glycol, such as N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine.

U.S. Pat. No. 4,123,061 issued Oct. 31, 1978 teaches that a golf ball can be made from a polyurethane pre-

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polymer of polyether and a curing agent, such as a trifunctional polyol, a tetrafunctional polyol or a diamine. The specific diamines taught by the '061 patent are 3,3'-dichlorobenzidine; 3,3'-dichloro-4,4'-diaminodiphenyl methane (MOCA); N,N,N',N'-tetrakis(2-hydroxypropyl)ethylenediamine and Curalon L, a trade name for a mixture of aromatic diamines sold by Uniroyal, Inc. These diamines are recognized by those of skill in the art as being fast-reacting diamine curing agents.

U.S. Pat. No. 3,989,568 issued Nov. 2, 1976 teaches a three-component system employing either one or two polyurethane prepolymers and one or two curing agents. Both polyol and diamine curing agents are taught by the '568 patent. The essential feature is that the reactants chosen for the system must have different rates of reactions within two or more competing reactions. The specific diamine curing agents taught are unhindered amines, such as methylenedianiline (MDA), and aromatic hindered amines, such as 5,5'-methylenebis-(methyl anthranilate). These diamines are recognized by those of skill in the art as being fast-reacting diamine curing agents.

It has now been discovered that a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols produces a golf ball cover that has good durability and performance. Golf balls made in accordance with the present invention have been found to have improved shear resistance and cut resistance compared to golf balls having covers made from either balata or SURLYN®.

Broadly, the present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. Preferably, the polyurethane composition of the present invention is used to make the cover of a golf ball.

Suitable polyurethane prepolymers for use in the present invention are made from a polyol, such as polyether, polyester or polylactone, and a diisocyanate. Suitable diisocyanates for use in the present invention include 4,4'-diphenylmethane diisocyanate (MDI) and 3,3'-dimethyl-4,4'-biphenylene diisocyanate (TODI).

Suitable polyether polyols include polytetramethylene ether glycol; poly(oxypropylene) glycol; and polybutadiene glycol. Suitable polyester polyols include polyethylene adipate glycol; polyethylene propylene adipate glycol; and polybutylene adipate glycol. Suitable polylactone polyols include diethylene glycol initiated caprolactone; 1,4-butanediol initiated caprolactone; trimethylol propane initiated caprolactone; and neopentyl glycol initiated caprolactone. The preferred polyols are polytetramethylene ether glycol; polyethylene adipate glycol; polybutylene adipate glycol; and diethylene glycol initiated caprolactone.

Suitable curatives for use in the present invention are selected from the slow-reacting polyamine group consisting of 3,5-dimethylthio-2,4-toluenediamine; 3,5-dimethylthio-2,6-toluenediamine; N,N'-dialkyldiamino diphenyl methane; trimethylene-glycol-di-p-aminobenzoate; polytetramethyleneoxide-di-p-aminobenzoate; or

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a difunctional glycol; and mixtures thereof. 3,5-dimethylthio-2,4-toluenediamine and 3,5-dimethylthio-2,6-toluenediamine are isomers and are sold under the trade name ETHACURE® 300 by Ethyl Corporation. Trimethylene glycol-di-p-aminobenzoate is sold under the trade name POLACURE 740M and polytetramethyleneoxide-di-p-aminobenzoates are sold under the trade name POLAMINES by Polaroid Corporation. N,N'-dialkyldiamino diphenyl methane is sold under the trade name UNILINK® by UOP.

Suitable difunctional glycols are 1,4-butanediol; 1,3-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol; dipropylene glycol; and ethylene glycol. Difunctional glycols are inherently slow-reacting.

A slow-reacting curing agent with respect to amines means that the amine groups on the curing agent are sterically and/or electronically hindered because of the presence of electron withdrawing groups or interfering bulky groups situated adjacent to the reaction sites. A long chain flexible spacer of at least four carbons between reaction sites or three carbons with electron withdrawing groups also contributes to the slower reactivity of polyamines.

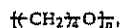
Slow-reacting polyamine curing agents such as 3,5-dimethylthio-2,4-toluenediamine and 3,5-dimethylthio-2,6-toluenediamine are isomers with two or more of the sites on the benzene ring substituted with groups that sterically hinder the reaction ability of the amine groups. Slow-reacting polyamine curing agents such as trimethylene glycol-di-p-aminobenzoate and polytetramethyleneoxide-di-p-aminobenzoate have the two amine groups situated adjacent to two electron withdrawing carbonyl groups,



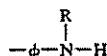
and are separated by flexible spacers, trimethylene,



and polytetramethyleneoxide,



respectively. Still another suitable group of polyamines comprises N,N'-dialkyldiamino diphenyl methane such as 4,4'-dibutyl diamine diphenyl methane wherein the aromatic amine group, $-\phi-\text{NH}_2$, is substituted by an alkyl group to become an aromatic secondary amine,



The alkyl groups attached to the amine atoms, the flexible spacers between the amine groups, electron withdrawing groups and bulky groups substituted adjacent to the amine atoms all contribute to attenuate the reactivity of the amine, offering an increase in reaction time.

Preferably, a golf ball is made in accordance with the present invention by molding a cover about a core wherein the cover is formed from a polyurethane composition comprising a polyurethane prepolymer and a slow-reacting polyamine curing agent or a difunctional glycol. Preferably, the cover is molded about the core in accordance with the teaching of U.S. patent applica-

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tion Ser. No. 314,466 filed Feb. 22, 1989. The '466 application is incorporated herein by reference.

It has also been found that in order to alleviate the undesirable yellowish color of the polyurethane cover an effective amount of white pigment and violet agent can be added to the cover composition. Suitable violet agents include PV Fast Violet RL Special and Hostapern Violet RL Extra Strong sold by Hoechst Celanese Corporation; and Violet 23 sold by Sun Chemical Corporation. The amount of violet agent added to the cover composition is preferably about 0.0005% to about 0.002% based on total weight of cover stock. Good results have been obtained with about 0.001% by weight. Preferably, about 3.5% of white pigment by weight of the total cover composition is used in the cover stock of the present invention. Suitable white pigments include titanium dioxide, calcium carbonate, zinc oxide and zinc sulfide.

Additional components which can be added to the cover composition include U.V. stabilizers and other dyes, as well as optical brighteners and fluorescent pigments and dyes in conventional amounts.

There are two basic techniques used to process urethane elastomers, the prepolymer technique and the one-shot technique. The prepolymer technique requires initially the reaction between a base polyol and an excess base diisocyanate to produce a prepolymer with about 7.5% to 14% isocyanate groups (NCO). The prepolymer is further reacted with an appropriate curative to produce the elastomer. The one-shot technique utilizes the diisocyanate, the base polyol and the curative to react all in one step. The prepolymer technique is preferred because it provides better control of chemical reaction and, consequently, results in more uniform properties for the elastomers.

The preferred process for making a molded golf ball cover in accordance with the present invention comprises an initial curing step in an open mold followed by a molding step wherein the core is placed into one of the mold cups. The mold is then closed and the urethane is allowed to cure. The molding step comprises an initial molding step wherein a first mold having smooth-walled fixed-pin mold cups is used followed by a final molding step wherein the smooth-surfaced golf ball product from the initial molding step is subject to a second mold having mold cups with a negative dimple pattern which is used to overmold a dimple pattern onto the smooth-surfaced golf ball product.

The preliminary curing step in the process of the present invention comprises introducing into both halves of an open mold urethane cover stock material and allowing that material to partially cure. The time necessary for the partial curing will vary, depending on the exact composition of the cover stock. The applicant has found that the length of time necessary for the partial curing is about equal to the time needed for the urethane to become sufficiently adhesive between the wall of the mold cup and the core to prevent a core placed in the top mold cup from falling out of the mold cup when the top mold cup is swung over and placed on top of the bottom mold cup. Good results have been obtained at a time of about 0.5 minute. The period for the initial curing is conveniently determined between a mold cup made from stainless steel or brass and a core.

A convenient method for determining the length of time necessary for the initial curing step is to measure the viscosity of the urethane cover stock. Generally,

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there is about a two-fold increase in the viscosity of the polyurethane. To determine the viscosity, about 2 ml of polyurethane cover stock is placed onto a polished aluminum surface which is at an angle of 300 to the horizontal. Upon initially mixing the cover stock, prepolymer plus curing agent, the cover stock will travel 3 inches (7.62 cm) in about 5 seconds. At the time the initial curing step is complete, about 2 ml of the cover stock will travel 3 inches (7.62 cm) on the 30° aluminum surface in about 30 seconds.

In the initial molding step, cover stock flows about the core while pins correctly position the core inside the cover stock and a golf ball product that has substantially the size and shape of a finished golf ball is produced. While the mold can be of the retractable-pin type, it is preferred to use a mold with fixed pins, i.e. pins which are not retractable. This golf ball product of the initial molding operation is subjected to a final molding step in which heat and pressure are used to impart a dimple pattern onto the smooth-surfaced golf ball product and to close any pinholes which may exist.

Preferably, in the initial molding step a core, either wound or solid, is placed into the top half of a pin mold and the mold is closed and subjected to low pressure to maintain a seal between mold plates. The smooth-surfaced golf ball product of the initial molding step may be removed from the mold when the ball so produced is capable of being handled without readily becoming marred or deformed. The pins of the initial smooth-walled mold ensure proper positioning of the core during this initial molding step.

In the final molding step, a compression mold is used to impart a dimple pattern upon the cover of the smooth-surfaced golf ball product. In this final molding step, the smooth-surfaced golf ball product is subjected to heat and pressure such that any pinholes which are in the ball's cover are closed and such that the cover conforms to the dimple pattern of the mold halves.

It is essential that the smooth-surfaced golf ball product of the initial molding step be subjected to the final molding step at a time when the cover stock is able to conform to the dimple pattern of the mold cups in the second mold. The mold used for the initial molding step may be either a fixed-pin or a retractable-pin mold. Use of a fixed-pin mold is preferable because of the lower initial cost, lower operating and maintenance costs and ease of use. In either case, the size of the mold cups is about that of a conventional golf ball mold, i.e. nominally 1.68 inches (4.25 cm) for American sized balls and nominally 1.62 inches (4.10 cm) for British sized balls. Both the fixed-pin and retractable-pin molds are conventional.

The mold used in the final molding step is preferably a conventional compression mold in which each of the mold cups has a desired negative dimple pattern.

An intermediate curing step is preferably employed after the initial molding step but before the final molding step. The intermediate curing step allows the cover stock to cure to a point such that the cover stock is able to hold the dimple pattern of the mold halves of the compression mold after applying the heat and pressure of the final molding step. If the intermediate curing step is too short, the cover stock is unable to retain the dimple pattern from the final molding step and a poor quality golf ball is produced. If the intermediate curing step is too long, the cover stock is unable to conform to the dimple pattern of the mold halves from the compression mold. The time period for the intermediate step will

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vary depending upon the chemical composition of the cover stock and upon the ratio of curing agent and prepolymer used in formulating the cover stock.

The length of time, temperature and pressure will vary empirically with each composition of cover stock. It has been found that the initial molding step is suitably about 5 to about 30 minutes, depending upon the mold temperature and the chemical composition of the cover stock, with enough pressure to keep the mold sealed during the initial molding step.

The intermediate curing step may also be determined empirically. It is typically up to about 1 hour at ambient temperature and pressure.

The initial molding time and the intermediate curing time can be kept to a minimum provided that a sufficient amount of the catalyst is added to the cover stock, the mold temperature is kept high, or the nature of the chemical reaction is fast.

While the length of time, temperature and pressure for the intermediate curing step may be determined empirically, it has been found that this can be calculated by using a rheometer to measure the shear resistance of the cover stock composition. The degree of cure can also be measured by a Vibrating Needle Curemeter sold by Rapra Technology Ltd.

With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, inter alia, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness of about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention. More preferred is a hardness of about 12D to 20D.

This hardness is suitably measured with a Shore D Durometer made by Shore Instrument and Mfg. Co., Inc. The measurement is made in accordance with ASTM D 2240, "Indentation Hardness of Rubber and Plastic by Means of a Durometer." This test is performed on a 0.25-inch (6 mm) thick test plaque which has been molded for 5.5 minutes at 140° F. (60° C.) in a test slab mold. The hardness of the plaque is measured after 5.5 minutes and at one-minute intervals thereafter up to a total of 30 minutes. The length of time for the intermediate curing step can be determined when the cover stock reaches a hardness between 10D to 30D as measured by the durometer hardness measurement technique. This length of time is suitably found to be 5 to 30 minutes.

After the intermediate curing, the golf ball product is transferred to a compression mold where the final curing takes place. In this step, the golf ball product is subjected to heat and pressure to form dimples in its surface. If a fixed-pin mold was used in the initial molding step, then the final molding step closes the holes in the cover by subjecting the ball to enough heat and pressure to close the pinholes. This final curing time suitably takes about 1 to 4 minutes, with good results being obtained at about 2 minutes. The temperature is suitably about 150° F. (65.5° C.) to about 275° F. (135° C.), with good results being obtained at about 195° F. (90.5° C.) at about 1800 psi. The total final molding step, including preheating and cooling of the mold, takes approximately 8 minutes.

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The dimpled golf ball product from the final molding step can be subjected to standard golf ball finishing operations such as buffing, painting, nameplating and packaging.

These and other aspects of the present invention may be further understood with reference to the following examples.

EXAMPLE 1

Thins, example illustrates making a polyurethane covered two-piece golf ball in accordance with the present invention. Table I below illustrates the components used to make the golf ball cover composition:

TABLE I

	Grams
MDI prepolymer*	100.00
Polamine 250**	48.87
White Dispersion	5.21

*MDI prepolymer is 4,4'-diphenylmethanediisocyanate with a polyol of polytetramethylene ether glycol.

**Polamine 250 is polytetramethyleneoxide-di-p-aminobenzoate having a molecular weight of about 476 g/m.

A golf ball was made having a cover formulated from the composition above following the teachings of U.S. patent application Ser. No. 314,466 filed Feb. 22, 1989. This ball was tested against a conventional three-piece ball with a cover made from balata.

The golf ball of the present invention was found to be comparable as illustrated in Table II below:

TABLE II

	Present Invention	384 Tour
PGA Compression	104	84
Initial Velocity (feet/second)	252.08	252.03
Spin Rate (rpm)		
13" (simulated driver)	2392	2600
26" (simulated 5-iron)	4572	4721
Distance (meters) (carry only)	222.10	220.91

PGA compression was measured with a PGA compression testing machine in a conventional manner. Initial velocity, spin rate and distance were measured in conventional manner. The 384 Tour is a commercial ball sold by Acushnet Company of New Bedford, Mass.

EXAMPLE 2

This example illustrates making a polyurethane covered wound golf ball in accordance with the present invention. Table III below illustrates the components used to make the golf ball cover composition:

TABLE III

	Grams
MDI Prepolymer*	100.00
1,4-butanediol	11.04
White Dispersion	3.89
DABCO-33LV Catalyst	0.04

*MDI Prepolymer is 4,4'-diphenylmethanediisocyanate with a polyol of polytetramethylene ether glycol.

The golf ball was made having a cover formulated from the composition above following the teachings of U.S. patent application Ser. No. 314,466 filed Feb. 22, 1989. This ball was tested against a conventional three-piece ball with a cover made from balata.

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The golf ball of the present invention was found to be comparable as illustrated in Table IV below:

TABLE IV

	Present Invention	384 Tour
PGA Compression	85	85
Initial Velocity (feet/second)	252.88	251.56
Spin Rate (rpm)		
13" (simulated driver)	2753	2847
26" (simulated 5-iron)	4750	4672
Distance (meters) (carry only)	219.18	218.45

It has also been found that the difunctional glycol curing agent can be used with the slow-reacting polyamine curing agent of the present invention. However, it has been found that if the slow-reacting polyamine curing agent is diluted with a difunctional glycol curing agent, the cover cuts or shears more easily than a cover made with 100% slow-reacting polyamine curing agent.

A golf ball product made in accordance with the present invention can comprise a polyurethane prepolymer cured with a curing agent system comprising 95% to 5% of a slow-reacting diamine curing agent and 5% to 95% of a difunctional glycol curing agent. More preferably, when both curing agents are used together, about 25% to about 75% of the polyamine is used and about 75% to about 25% of the difunctional glycol is used.

It will be understood that the claims are intended to cover all changes and modifications of the preferred embodiments of the invention herein chosen for the purpose of illustration which do not constitute a departure from the spirit and scope of the invention.

What is claimed is:

1. A golf ball comprising a core and a cover wherein said cover is made from a thermosetting polyurethane composition comprising a single polyurethane prepolymer made from any of 4,4'-diphenyl methane diisocyanate or 3,3'-dimethyl-4,4'-biphenyl diisocyanate and a polyol cured with a slow-reacting polyamine selected from the group consisting of 3,5-dimethylthio-2,4-toluenediamine; 3,5-dimethylthio-2,6-toluenediamine; N,N'-dialkyl diamino diphenyl methane; trimethylene glycol-di-p-aminobenzoate; polytetramethyleneoxide-di-p-aminobenzoate and mixtures thereof.

2. The golf ball of claim 1 wherein the polyol is selected from the group consisting of: polytetramethylene ether glycol; poly(oxypropylene) glycol; polybutadiene glycol; 1,4-butanediol initiated caprolactone diethylene glycol initiated caprolactone; trimethylol propane initiated caprolactone; neopentyl glycol initiated caprolactone; polyethylene adipate glycol; polyethylene propylene adipate glycol; and polybutylene adipate glycol.

3. The golf ball of claim 1 wherein said polyurethane composition further comprises an effective amount of white pigment and violet agent to alleviate a yellow color.

4. The golf ball of claim 3 wherein the amount of white pigment is about 3.5% by weight of the total polyurethane cover composition and the amount of the violet agent is about 0.0005% to about 0.002% by weight of the total polyurethane cover composition.

5. A golf ball comprising a core and a cover wherein said cover is made from a single polyurethane prepolymer of a polyol, 4,4'-diphenyl methane diisocyanate and a slow-reacting curing agent, said curing agent consist-

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ing essentially of about 5% to 95% by weight of slow-reacting polyamine, selected from the group consisting of 3,5-dimethylthio-2,4-toluenediamine; 3,5-dimethylthio-2,6-toluenediamine; N,N'-dialkyl diamine diphenyl methane; trimethylene glycol-di-p-aminobenzoate; polytetramethyleneoxide-di-p-aminobenzoate and mixtures thereof and about 95% to 5% by weight of difunctional glycol.

6. The golf ball of claim 5 wherein the polyol is selected from the group consisting of: polytetramethylene ether glycol; poly(oxypropylene) glycol; polybutadiene glycol; 1,4-butanediol initiated caprolactone; diethylene glycol initiated caprolactone; trimethylol propane initiated caprolactone; neopentyl glycol initiated caprolactone; polyethylene adipate glycol; polyethylene propylene adipate glycol; and polybutylene adipate glycol.

7. The golf ball of claim 5 wherein the difunctional glycol curing agent is selected from the group consisting of 1,4-butanediol; 1,3-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol; dipropylene glycol; ethylene glycol; and mixtures thereof.

8. The golf ball of claim 5 wherein said cover further comprises an effective amount of white pigment and violet agent to alleviate a yellow color.

9. The golf ball of claim 8 wherein the amount of white pigment is about 3.5% by weight of the total

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polyurethane cover composition and the amount of the violet agent is about 0.0005% to about 0.002% by weight of the total polyurethane cover composition.

10. A golf ball comprising a core and a cover wherein said cover is made from a polyurethane composition consisting essentially of a single polyurethane prepolymer made from any of 4,4'-diphenyl methane diisocyanate or 3,3'-dimethyl-4,4'-biphenyl diisocyanate and a polyol cured with a slow-reacting polyamine curing agent, selected from the group consisting of 3,5-dimethylthio-2,4-toluenediamine; 3,5-dimethylthio-2,6-toluenediamine; N,N'-dialkyl diamino diphenyl methane; trimethylene glycol-di-p-aminobenzoate; polytetramethyleneoxide-di-p-aminobenzoate and mixtures thereof.

11. The golf ball of claim 10 wherein the polyol is selected from the group consisting of: polytetramethylene ether glycol; poly(oxypropylene) glycol; polybutadiene glycol; 1,4-butanediol initiated caprolactone; diethylene glycol initiated caprolactone; trimethylol propane initiated caprolactone; neopentyl glycol initiated caprolactone; polyethylene adipate glycol; polyethylene propylene adipate glycol; and polybutylene adipate glycol.

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EXHIBIT G

OFFICIAL COMMUNICATION FACSIMILE

CENTRAL REEXAMINATION UNIT (FAX NO: 571-273-9900)

Number of pages including this page 38

In re Sullivan)
 Reexamination Proceeding)
 Control No. 95/000,120)
 Filed: January 17, 2006)
 For: U.S. Patent No. 6,210,293)

Examiner: Michael W. O'Neill
 Art Unit: 3993

FAX RECEIVED

APR 13 2006

In re Sullivan)
 Reexamination Proceeding)
 Control No.: 95/000,121)
 Filed: January 17, 2006)
 For: U.S. Patent No. 6,503,156)

Examiner: Michael W. O'Neill
 Art Unit: 3993

REEXAM UNIT

In re Sullivan)
 Reexamination Proceeding)
 Control No.: 95/000,122)
 Filed: January 17, 2006)
 For: U.S. Patent No. 6,506,130)

Examiner: Michael W. O'Neill
 Art Unit: 3993


In re Sullivan)
 Reexamination Proceeding)
 Control No.: 95/000,123)
 Filed: January 17, 2006)
 For: U.S. Patent No. 6,595,873)

Examiner: Michael W. O'Neill
 Art Unit: 3993

Attached to this facsimile communication cover sheet is a Petition to Vacate
 Reexamination Orders as Ultra Vires and Certification Under 37 C.F.R. § 1.903, faxed this 13th
 day of April, 2006, to the United States Patent and Trademark Office.

Respectfully submitted,

Date: April 13, 2006


 Dorothy P. Whelan (Reg. No. 33,814)
 J. Patrick Finn III (Reg. No. 44,109)

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 information. If you have received this facsimile in error, please immediately call us collect at
 (612) 335-5070 to arrange for its return. Thank you.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,120) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,210,293)

FAX RECEIVED

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,121) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,503,156)

APR 13 2006**REEXAM UNIT**

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,122) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,506,130)

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,123) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,595,873)

Central Reexamination Unit
571-273-9900

PETITION TO VACATE REEXAMINATION ORDERS AS ULTRA VIRES

On April 6 and April 7, 2006, the PTO ordered reexamination of the four patents that are subject to the above-captioned reexamination proceedings. This petition is a timely and authorized filing pursuant to MPEP § 2646(I) because orders granting the reexaminations have issued. Thus, pursuant to 37 C.F.R. § 1.181 and MPEP § 2646, Patent Owner, Callaway Golf Company ("Callaway Golf"), requests the Director to vacate the reexamination orders relating to the aforementioned *inter partes* reexamination proceedings brought by Acushnet Company ("Acushnet"). The undersigned attorneys represent Callaway Golf, which is the assignee of record of the above-referenced U.S.

patents. Callaway Golf purchased the assets of the Top-Flite Golf Company in 2003, including the patents in suit.¹

The four patents that are the subject of Acushnet's *inter partes* reexamination requests are also subject to two Stipulations of Dismissal, filed in and accepted by the United States District Court for the District of Delaware, requiring the parties to ultimately submit all patent disputes to that Court for resolution. Acushnet violated these Stipulations, and the Settlement Agreement underlying them, when it filed the subject *inter partes* reexamination requests. The District Court has exclusive and plenary jurisdiction over any patent dispute between the parties and, as specified in the Stipulations, "retain[s] jurisdiction to resolve any and all disputes arising out of the Settlement Agreement in accordance with the terms of the Settlement Agreement." Acushnet therefore did not have standing to file the *inter partes* reexamination requests, and the Director must vacate them in their entirety.

PROCEDURAL HISTORY

1. Callaway Golf's predecessor in interest, Spalding, and Acushnet were parties to a settlement agreement dated November 15, 1990, resolving a long-standing patent dispute regarding golf ball technology. That initial agreement between the parties required that, prior to filing suit over any patent dispute, the parties first notify each other of adverse patent claims and pursue alternative dispute resolution, including non-binding mediation. That initial agreement was for a term of ten years.²

2. Subsequent litigation ensued between the parties in late 1995 that involved claims of unfair advertising and patent infringement, again involving golf ball technology. To resolve that litigation, the parties executed a Settlement Agreement in 1996 that superseded the 1990 agreement and required a specific, multi-step alternative dispute resolution process for any intellectual property dispute, including patent disputes. [Ex. A, 1996 Settlement Agreement.] The agreement specified that if the alternative dispute

¹ The agreement underlying this petition was between Spalding & Evenflo Companies Inc., ("Spalding") and Acushnet. For all purposes relevant here, Spalding became Top-Flite Golf. Callaway Golf purchased the assets of Top-Flite Golf in 2003 and therefore, as explained below, is the successor-in-interest to Spalding under the agreement at issue in this petition.

² That specific agreement is confidential and cannot be attached to this petition.

resolution process was unsuccessful, the only other venue for resolution of any dispute was a lawsuit in the District Court for the District of Delaware.

3. The parties incorporated the 1996 Settlement Agreement into their Federal Rule of Civil Procedure 41 Stipulations of Dismissal. [Ex. B & C, 1996 Stipulations of Dismissal incorporating the 1996 Settlement Agreement.] These Stipulations were filed in and accepted by the Delaware District Court. [Ex. D, Docket of Dismissals in the lawsuits resolved by the 1996 Settlement Agreement.]

4. Prior to filing the subject *inter partes* reexamination requests, the parties in fact participated in the mandatory alternative dispute resolution process specified by the 1996 Settlement Agreement, including a non-binding mediation before Magistrate Judge Thyng of the Delaware District Court. That mediation process was unsuccessful, and the patent dispute between the parties was not resolved.

5. On January 17, 2006, while the mediation process was still underway, Acushnet filed the subject *inter partes* reexamination requests in violation of the Stipulations and the 1996 Settlement Agreement between the parties.

6. On February 9, 2006, as allowed under the Stipulations and 1996 Settlement Agreement, Callaway Golf filed suit against Acushnet in the United States District Court for the District of Delaware. That suit involves the four above-referenced U.S. patents and includes, among other issues, the same issues raised by Acushnet's requests for reexamination.

7. The PTO order reexaminations on control nos. 95/000,120 and 95/000,121 on April 7, 2006. The PTO ordered reexaminations on control nos. 95/000,122 and 95/000,123 on April 6, 2006.

**THE DIRECTOR MUST VACATE THE INTER PARTES REEXAMINATION
ORDERS BECAUSE ACUSHNET DOES NOT HAVE STANDING TO REQUEST
REEXAMINATION**

The right of a third party to request *inter partes* reexamination is not absolute. The MPEP recognizes that there are circumstances under which the PTO lacks authority to order *inter partes* reexamination, and requires the PTO, in such circumstances, to vacate any orders granting reexamination. MPEP § 2646 (I) states:

"In cases where no discretion to grant a request for reexamination exists, a petition [pursuant to 37 C.F.R. § 1.181] to vacate the decision to grant, or a request for reconsideration, will be entertained." (emphasis in original)

Here, Acushnet lacked standing to file the four subject *inter partes* reexamination requests by virtue of the Stipulations and underlying Settlement Agreement, providing that Acushnet's exclusive forum for challenging patent validity was the United States District Court for the District of Delaware. Acushnet breached the Stipulations and Settlement Agreement by filing these reexamination requests. The PTO, therefore, had no discretion to order reexamination based upon Acushnet's requests.

**ACUSHNET BREACHED THE STIPULATIONS AND SETTLEMENT
AGREEMENT BY FILING THE SUBJECT *INTER PARTES* REEXAMINATION
REQUESTS**

According to section 15 of the 1996 Settlement Agreement, the "Settlement Agreement is binding upon the parties . . . as well as their representatives and the successors, transferees and assigns . . ." [Ex. A. p. 15, section 15.]

Section 16 states that the "Settlement Agreement shall expire upon the expiration of the last to expire patent subject of this Settlement Agreement." Since the two patents identified by number in the Settlement Agreement (U.S. Patent Nos. 5,328,959³ and 5,368,304) remain in force, so also does the Settlement Agreement. [*Id.*, at p. 15, section 16.]

³ The '959 patent at issue is U.S. Patent No. 5,328,959, and not 5,329,959, which deals with an unrelated technology, and is listed in the actual text of the 1996 Settlement Agreement. This was a typographical error that the parties realized, but apparently did not remedy prior to the Agreement's execution.

Section 19.1 states that “*Any dispute arising out of or relating to patents, including the above mentioned patents, other intellectual property owned or controlled by the parties . . . shall be resolved in accordance with the procedures specified in this Section, which shall be the sole and exclusive procedure for the resolution of any such disputes.*” [*Id.*, at p. 15, section 19.1, (emphasis added).] Sections 19.2-19.6 specify the mandatory alternative dispute resolution procedures, including non-binding mediation before the Delaware District Court.

Section 19.7 states that “[a]t the conclusion of a referral to the Magistrate or other judge as set forth in 19.6, should the dispute remain unresolved, either party may initiate legal proceedings in the United States District Court for the District of Delaware, *and no other. Said court retains jurisdiction of the parties for such purposes.*” [*Id.*, at p. 18, section 19.7 (emphasis added)]

The last party executed the Settlement Agreement on August, 5, 1996, and the agreement became effective on that date. [See, Ex. A, at p. 15, section 17.]

The District Court, pursuant to the Stipulations of Dismissal executed by the parties, dismissed the respective cases. [See, Ex. D.] The Stipulations specifically incorporated the terms and conditions of the 1996 Settlement Agreement. [Exs. B & C, “Pursuant to 41(a)(1)(ii) of the Federal Rules of Civil Procedure and the a Settlement Agreement of August 5, 1996, the terms of which are incorporated herein by reference”]

The parties also stipulated and agreed that the District Court “shall retain jurisdiction to resolve any and all disputes arising out of the Settlement Agreement in accordance with the terms of the Settlement Agreement.” [*Id.*] Thus, even if Acushnet were to dispute the existence of the Settlement Agreement, or its interpretation and Acushnet’s breach of that agreement, only the Delaware District Court could resolve any such dispute.

CONCLUSION

For the foregoing reasons, there is good cause in this case for the Director, pursuant to MPEP § 2646, to vacate the *inter partes* reexamination proceedings. Thus, the undersigned attorneys request that the Director vacate the reexamination orders in an exercise of his discretion and authority under 37 C.F.R. § 1.181 and return jurisdiction to

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the District Court, where Acushnet agreed previously in settlement of prior litigation to resolve any future disputes, where there is existing litigation between the parties involving the same patents subject to reexamination, and where Acushnet's arguments regarding invalidity can and will be fully and fairly considered.

The Director is authorized to charge any fees or credit any overpayments to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

April 13, 2006


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EXHIBIT H

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,120) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,210,293)

In re Sullivan)
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Control No.: 95/000,121) Examiner: Michael W. O'Neill
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For: U.S. Patent No. 6,506,130)

In re Sullivan)
Reexamination Proceeding)
Control No.: 95/000,123) Examiner: Michael W. O'Neill
Filed: January 17, 2006) Art Unit: 3993
For: U.S. Patent No. 6,595,873)

Central Reexamination Unit
571-273-9900

RENEWED PETITION TO SUSPEND INTER PARTES
REEXAMINATION PROCEEDINGS

On April 6 and 7, 2006, the USPTO, in response to requests filed by Acushnet, ordered *inter partes* reexamination of the four patents that are the subject of the above-captioned reexamination proceedings. These four patents are also the subject of pending litigation between Acushnet and the Patent Owner, Callaway Golf, before the honorable Judge Susan L. Robinson in the U.S. District Court for the District of Delaware, Case No. C.A. No. 06-91 (SLR).

On April 13, 2006, Callaway Golf filed a Petition to Vacate the Reexamination Orders as Ultra Vires on the ground that Acushnet's filings violated two Stipulations of Dismissal, and the Settlement Agreement underlying them, filed in and accepted by the

United States District Court for the District of Delaware, designating that Court as the exclusive venue for resolving any patent disputes between Callaway Golf and Acushnet. That Petition to Vacate is pending. In the alternative, Callaway Golf, pursuant to 37 C.F.R. §§ 1.181, 1.182, 1.183, 1.987, and 35 U.S.C. § 314(c), requests the Director to suspend the above-referenced *inter partes* reexamination proceedings until the close of discovery in the litigation between the parties currently pending in the District of Delaware.

When concurrent litigation proceedings exist, MPEP § 2686.04(III) **requires** the Director to suspend the *inter partes* reexamination proceedings upon a showing of good cause. Here good cause exists because resolution of a number of issues, some of which relate to the jurisdictional basis for the *inter partes* reexamination proceedings themselves, requires factual discovery that only the District Court can order.

Callaway Golf originally filed a Petition to Suspend the *Inter Partes* Reexamination Proceedings on March 21, 2006. In Orders dated April 10 and 11, 2006, the Office of Patent Legal Administration discarded the Petition on the ground that it was untimely because it was filed prior to issuance of a Reexamination Order. Regardless of the merits of that determination,¹ the current Petition unquestionably is timely because Orders granting reexamination of all four patents have now issued. Moreover, the current Petition complies with 37 C.F.R. § 1.103(a) because there are no outstanding Office Actions on the merits that would require a response on the part of the patent owner.

PROCEDURAL HISTORY

1. On January 17, 2006, Acushnet filed the four above-referenced *inter partes* reexamination requests challenging the validity of the four above-referenced U.S. patents. Each request contains invalidity arguments based on 35 U.S.C. §§ 102 and 103, as well as Declarations by Acushnet employees presenting test result information.

¹ Contrary to the statements in the Orders discarding the Petition, the Petition did in fact comply with 37 C.F.R. § 1.939(b) because it did not address the merits of the reexamination requests. Moreover, it was authorized by 37 C.F.R. § 1.987, which states that "[i]f a patent in the process of *inter partes* reexamination is or becomes involved in litigation, the Director shall determine whether or not to suspend the *inter partes* reexamination proceeding." 37 C.F.R. § 1.987 does not specify any particular time period within which the petition can be filed.

2. On January 23, 2006, Acushnet petitioned to suspend action in the above-referenced *inter partes* reexamination proceedings.
3. On February 9, 2006, Acushnet petitioned to withdraw its petitions to suspend action.
4. On February 9, 2006, Callaway Golf filed suit against Acushnet in the United States District Court for the District of Delaware. This suit involves the four above-referenced U.S. patents.²
5. On February 16, 2006, the Office of Patent Legal Administration granted Acushnet's petitions to withdraw its petitions to suspend action.
6. On March 21, 2006, Callaway Golf filed a Petition to Suspend the *Inter Partes* Reexamination Proceedings.
7. On April 6 and 7, 2006, the USPTO ordered *inter partes* reexamination of the four above-referenced patents.
8. On April 10 and 11, 2006, the Office of Patent Legal Administration discarded Callaway Golf's Petition to Suspend the Inter Partes Reexamination Proceedings on the ground that it was not timely filed.
9. On April 13, 2006, Callaway Golf filed a Petition to Vacate the Reexamination Orders as Ultra Vires. That Petition is currently pending.

² Callaway Golf was prepared to file suit on January 16 and informed Acushnet of that fact. Callaway Golf delayed the filing due to Acushnet's request to forestall filing in order to allow prolonged mediation proceedings between the parties to continue. Acushnet then responded by filing the present requests for *inter partes* reexamination.

GOOD CAUSE EXISTS FOR THE DIRECTOR TO SUSPEND THE INTER PARTES REEXAMINATION PROCEEDINGS

35 U.S.C. § 314(c) states that all *inter partes* reexamination proceedings shall be conducted with special dispatch within the U.S. Patent and Trademark Office, “[u]nless otherwise provided by the Director for good cause.” (emphasis added). The Manual of Patent Examining Procedure (“MPEP”) discusses the application of this statute in situations where there is an *inter partes* reexamination proceeding associated with a concurrent litigation proceeding. MPEP § 2686.04(III). The MPEP states that “where there is good cause for the Director of the USPTO to suspend (stay) reexamination proceedings pending conclusion of litigation, a suspension will be effected.” *Id.* (emphasis added). In addition, the Code of Federal Regulations states that “[i]f a patent in the process of *inter partes* reexamination is or becomes involved in litigation, the Director shall determine whether or not to suspend the *inter partes* reexamination proceeding.” 37 C.F.R. § 1.987. Good cause includes at least situations where (1) “there is an issue that cannot be decided in the reexamination proceeding but affects the resolution of the proceeding” or (2) “there is an issue common to the litigation and the reexamination that can best be decided in court due to the availability in court of discovery and subpoena power (e.g., an issue heavily dependent on presentation of conflicting/contested evidence by the two parties).” MPEP § 2686.04(III).³

Good cause to suspend the above-referenced *inter partes* reexamination proceedings exists for at least the following reasons.

First, factual evidence obtainable via the District Court’s discovery and subpoena power in the co-pending litigation is needed to determine whether the USPTO lacks jurisdiction to conduct the above-referenced *inter partes* reexamination proceedings, or whether Acushnet is barred from filing an *inter partes* reexamination request. These are fundamental issues that go to the heart of whether the USPTO can even entertain Acushnet’s *inter partes* reexamination requests. Only the District Court has the power to order the discovery needed to uncover the relevant underlying facts.

³ The Orders discarding Callaway Golf’s originally filed Petition to Suspend the *Inter Partes* Reexamination proceedings suggest that where an *inter partes* reexamination is associated with a concurrent litigation proceeding, the only way to halt the reexamination proceeding is via a final judgment in the litigation proceeding. This is plainly wrong. It is contrary to statute and to the USPTO’s own rules.

Second, a full and fair assessment of patentability requires discovery in the form of answers to written requests and deposition testimony to evaluate the accuracy of the testing presented in Acushnet's declarations and relied upon to raise invalidity issues. Without such discovery, there is a risk that any ruling regarding validity will be based upon an incomplete record, thus undermining the viability of *inter partes* reexamination as an alternative to litigation for resolving validity disputes. Only the District Court has the power to order the necessary discovery.

Third, a full and fair assessment of patentability likewise requires consideration of evidence relevant to the objective criteria of non-obviousness (e.g., commercial success and copying by others). This evidence includes sales data related to the U.S. and foreign sales of Acushnet's infringing products, as well as evidence linking the commercial success of Acushnet's infringing products to the patented technology. Such evidence is a necessary and critical part of any obviousness analysis. Only the discovery process available in the concurrent litigation proceeding will uncover this evidence.⁴

I. The District Court's discovery and subpoena power is needed to resolve jurisdictional issues related to the *inter partes* reexamination requests.

37 C.F.R. § 1.913 states that "any person other than the patent owner or its privies may . . . file a request for *inter partes* reexamination" (emphasis added). This language on its face is broad enough to cover, and should be construed to cover, both current and former patent owners, and current and former privies. In addition, the doctrine of assignor estoppel bars an assignor and its privies from challenging the validity of a patent. See, e.g., *Shamrock Technologies, Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 793 (Fed. Cir. 1990).

The question of whether one party is in privity with another party is highly fact dependent. Assessing a relationship for privity involves evaluating all direct and indirect contacts. *Mentor Graphics Corp. v. Quickturn Design Systems, Inc.*, 150 F.3d 1374, 1379 (Fed. Cir. 1998). The USPTO itself has acknowledged the factual nature of this inquiry.

⁴ Discovery likewise is needed to explore representations that Acushnet made to the USPTO when it obtained its own patent (Hebert, U.S. 5,885,172) covering golf balls similar to the golf balls that are the subject of the reexamination requests. Acushnet's statements are important because they involved distinguishing some of the same prior art patents upon which Acushnet now bases its requests for reexamination, and thus are inconsistent with the arguments presented in the requests.

In response to a comment asking the USPTO to define the term “privies,” which appears in 35 U.S.C. § 317, the USPTO stated the following:

The question of whether a party is a privy must be decided on a case-by-case basis, evaluating all the facts and circumstances of each individual situation. It would not be appropriate at this time to provide an “all encompassing” definition, that might not account for facts which could arise in the future, which facts cannot be anticipated.

(Emphasis added) Rules to Implement Optional Inter Partes Reexamination Proceedings, 65 FR 76756, 76759 (December 7, 2000).

Here, Michael J. Sullivan is the only named inventor for each of the above-referenced patents. Mr. Sullivan is the former Top-Flite vice president of golf ball research and engineering and, as noted above, is the inventor/assignor of the above-referenced patents. As such, he is a privy of the former patent owner. Since, according to a recent news article about the current litigation available at GolfDigest.com (Exhibit A), Mr. Sullivan is also the current Acushnet vice president of intellectual property, there is a significant question whether Mr. Sullivan has, through Acushnet, in effect improperly filed the instant reexamination requests in violation of 37 C.F.R. § 1.913. Moreover, under the doctrine of assignor estoppel, Mr. Sullivan’s significant, executive-level relationship with Acushnet may be sufficient to find that privity exists between him and Acushnet, making Acushnet’s filings of the instant requests improper for the independent reason that they violate the doctrine of assignor estoppel.

The Director should suspend the *inter partes* reexamination proceedings so that the District Court’s discovery and subpoena power can be used, at least, to obtain factual evidence regarding the relationship between Mr. Sullivan and Acushnet. This factual evidence is important for the USPTO to determine whether privity exists such that the jurisdictional requirements for *inter partes* reexamination set forth in 37 C.F.R. § 1.913 are not met. This same factual evidence is important to the issue of assignor estoppel, which may bar Acushnet from challenging the validity of the above-referenced patents. The existence of either would compel the USPTO to vacate the *inter partes* reexamination proceedings as *ultra vires*.

II. A full and fair evaluation of patentability requires discovery related to Acushnet's test data.

Acushnet's declarations contain testing information that Acushnet relies upon to support its allegations of invalidity. In the co-pending litigation proceeding, Callaway Golf will have the opportunity to question Acushnet's testing, thereby potentially discovering relevant information about, for example, the meaning, significance, and reliability of the testing. This information is important for a complete and proper assessment of patentability. At a minimum, this information will allow Callaway Golf to duplicate the testing and provide the USPTO with Callaway Golf's results. The *inter partes* reexamination statute and rules do not provide a mechanism for Callaway Golf to obtain the necessary information from Acushnet. For example, the *inter partes* reexamination statute and rules do not allow Callaway Golf to ask the Acushnet employees who performed the testing about the specific testing conditions, the variability of the testing, or the repeatability of the testing. Likewise, there is no mechanism to allow Callaway Golf to ask whether or not the Acushnet employees who performed the testing received any special compensation for their work. The District Court's discovery and subpoena power provides opportunities to obtain this factual evidence that is critical to the issue of patentability. Without this evidence, any determination regarding patentability will be based upon an incomplete record.

III. A full and fair evaluation of patentability requires discovery related to objective evidence of non-obviousness.

Without commenting on the merits of Acushnet's *inter partes* reexamination requests, it is clear that a significant portion of Acushnet's requests deals with invalidity under 35 U.S.C. § 103. According to well-established case law and the MPEP, objective evidence such as commercial success and copying by others is relevant to the issue of obviousness and must be considered in every case in which the evidence is present. *See, e.g., In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998) ("The secondary considerations are ... essential components of the obviousness determination") and MPEP §§ 716 and 2141. The Federal Circuit has held that it is reversible error to ignore such evidence in an obviousness analysis. *See In re Sernaker*, 702 F.2d 989, 997 (Fed. Cir. 1983) (reversing

claim rejections based upon obviousness where no evidence existed that the Board considered objective evidence that conclusively demonstrated nonobviousness).

Evidence of commercial success includes both the patentee's sales of the patented products and the defendant's sales of infringing products. *Litton Systems, Inc. v. Honeywell, Inc.*, 87 F.3d 1559, 1569 (Fed. Cir. 1996) ("Both [the patentee] Litton and [the infringer] Honeywell enjoyed commercial success with the patented method"). Third party sales may also be relevant. *See Truswal Systems Corp. v. Hydro-Air Engineering, Inc.*, 813 F.2d 1207, 1212 (Fed. Cir. 1987) (third party's sales of infringing product relevant to commercial success of patented invention). In addition, both U.S. and foreign sales may be used to establish the commercial success of the patented invention, and thus non-obviousness. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1461 (Fed. Cir. 1984).

Evidence of copying by others, including the infringer, helps demonstrate that a claimed invention would not have been obvious. This is particularly true when copying occurs on the heels of failure to develop a competing product independently. *See Advanced Display Systems, Inc. v. Kent State University*, 212 F.3d 1272, 1285-86 (Fed. Cir. 2000) ("The import of such copying merits even greater weight in view of [the infringer's] failure to develop independently the claimed invention").

In the co-pending litigation proceeding, the District Court's discovery and subpoena power are available to uncover evidence relevant to the objective indicia of non-obviousness. For example, Callaway Golf will have access to Acushnet's foreign and domestic sales data to demonstrate the commercial success of the inventions claimed in Callaway Golf's patents that are the subject of the *inter partes* reexamination requests. In addition, only discovery available in the District Court will show conclusively whether the commercial success of Acushnet's infringing products is indeed due to the patented technology—a fact that Acushnet presently denies. Even more fundamentally, the District Court has the ability to determine whether the claims of Callaway Golf's patents do, in fact, cover Acushnet's products, which is necessary in order to establish a nexus between Acushnet's activities and any commercial success or copying. Likewise, through the District Court proceedings, Callaway Golf will have access to evidence

within Acushnet's possession relevant to copying, including the circumstances surrounding any decision by Acushnet to adopt the patented inventions.

Neither the *inter partes* reexamination statute nor the rules provides a mechanism for uncovering this evidence of nonobviousness or for determining whether the requisite nexus exists between the claimed invention and secondary considerations such as commercial success. Depriving the patentee of the ability to obtain this evidence effectively forces the patentee to enter the *inter partes* reexamination proceeding with one hand tied behind its back.

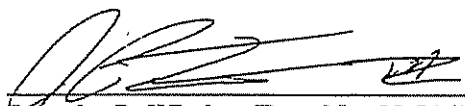
CONCLUSION

For the foregoing reasons, there is good cause in this case for the Director, pursuant to MPEP § 2686.04(III), to suspend the *inter partes* reexamination proceedings until the close of discovery in the litigation between Callaway Golf and Acushnet currently pending in the District of Delaware. Thus, the undersigned attorneys request that the Director suspend the reexamination proceedings in an exercise of his discretion and authority under 37 C.F.R. § 1.987.

The Director is authorized to charge any fees or credit any overpayments to Deposit Account No. 06-1050.

Respectfully submitted,

Date: April 28, 2006


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EXHIBIT I

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: **6,506,130**

Control No. 95/000,122

Inventor: Michael J. SULLIVAN

Issued: January 14, 2003

Appl. 09/832,154

Filed: April 10, 2001

Titled: **MULTI LAYER GOLF BALL**

MAIL STOP *Inter Partes* REEXAMINATION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**ACUSHNET'S OPPOSITION TO PATENT OWNER'S PETITION TO VACATE
REEXAMINATION ORDERS AS ULTRA VIRES TRANSMITTAL**

Enclosed are:

1. Acushnet's Opposition to Patent Owner's Petition to Vacate Reexamination Orders as Ultra Vires (11 sheets)
2. Declaration of Joseph Nauman (3 sheets)
3. Transmittal (1 sheet)
4. One (1) Return Postcard

Dated: April 27, 2006

Howrey LLP

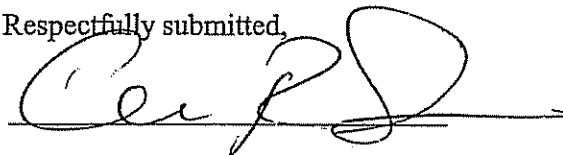
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: **6,506,130**

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Inventor: Michael J. SULLIVAN

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P.O. Box 1450

Alexandria, VA 22313-1450

**ACUSHNET'S OPPOSITION TO PATENT OWNER'S PETITION TO VACATE
REEXAMINATION ORDERS AS *ULTRA VIRES***

Sir:

Acushnet Company hereby files its Opposition to Patent Owner's Petition to Vacate Reexamination Orders as *Ultra Vires* pursuant to M.P.E.P. § 2646 I. This Opposition is being filed within two weeks of the Patent Owner's petition pursuant to M.P.E.P. § 2646 I.

Callaway's petition to vacate should be denied. The Director is authorized and required by Congress to proceed with the reexamination with "special dispatch." 35 U.S.C. § 314(c). Acushnet's request for reexamination is not barred by the 1996 Settlement Agreement and (even assuming *arguendo* it was) there is no basis for asserting that the Director's order granting reexamination was *ultra vires*.

Therefore Callaway's petition should be **DENIED**.

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I. FACTUAL BACKGROUND

Acushnet filed the above-identified request for reexamination on January 17, 2006, after negotiations and several meditations failed. (Nauman Decl. at ¶¶ 3-5.) Callaway has already filed one petition in connection with this matter in an attempt to forestall this proceeding. That petition was denied.

Callaway now files yet another petition to prevent the PTO from reexamining the '130 patent after the Director has already ordered reexamination. In its petition, Callaway relies on a 10-year-old agreement that has two parts: (1) a dispute resolution provision (*see* Callaway Exhibit ("the Agreement") at ¶¶ 19.1-19.6); and (2) a forum-selection clause in the event of *litigation* between the parties (*see id.* at ¶ 19.7).

This dispute has been going on for many years, even prior to Callaway's purchase of the '130 patent from Spalding in September 2003. During the time period between December 2001 through February 9, 2006—when Callaway filed suit against Acushnet in the United States District Court for the District of Delaware—the parties loosely followed the dispute resolution process set forth in the Agreement. The parties did not adhere to the time frames specified in the Agreement, particulars were not followed, and neither party was convinced that the Agreement applied to this dispute.

After over four years of dispute resolution discussions, Callaway filed legal proceedings against Acushnet in the United States District Court for the District of Delaware.¹ (*See* Agreement at ¶ 19.7.) Hence, to the extent that the Agreement applies, both the mediation and forum selection provisions of the Agreement have been fully complied with by the parties.

In an yet another effort to avoid reexamination of Callaway's dubious patents, on April 13, 2006, Callaway filed a petition under 37 C.F.R. § 1.181 requesting that the Director fail to resolve the substantial new questions raised by Acushnet's request for *inter partes* reexamination of the '130 patent, despite the important public interest "in eliminating worthless patents."

¹ Despite Callaway's statements to the contrary, Acushnet filed this *inter partes* reexamination proceeding after concluding both the mediation specified in 19.5 and that specified in 19.6 of the 1996 Settlement Agreement. (Callaway Ex. at ¶¶ 19.5-19.6.) Pursuant to paragraph 19.5, Acushnet and Callaway had a mediation with Mr. David W. Plant on August 3, 2005. (Nauman Decl. at ¶ 3.) A second mediation between Acushnet and Callaway before Magistrate Judge Thyng (Magistrate Judge Mary Pat Trostle), as set forth in paragraph 19.6 was concluded on October 28, 2005, months before Acushnet filed its reexamination requests. (Nauman Decl. at ¶ 4.) Acushnet

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Houston Atlas, Inc. v. Del Mar Scientific, Inc., 217 U.S.P.Q.2d (BNA) 1032, 1037 (N.D. Tex. 1982).

II. CALLAWAY NEVER OBJECTED TO REEXAMINATION ALTHOUGH IT WAS AWARE OF ACUSHNET'S INTENTIONS PRIOR TO THE FILING OF ACUSHNET'S REQUESTS.

Early this year, Acushnet told Mr. Steve McCracken, General Counsel of Callaway, that if Callaway was going to file legal proceedings, Acushnet would seek reexamination of Callaway's patents. (Nauman Decl. at ¶ 5.) Callaway never objected to Acushnet's seeking reexamination of its patents. (Nauman Decl. at ¶ 6.) In fact, Callaway considered a possible settlement of the dispute involving the reexamination of an Acushnet patent.

On January 17, 2006, Callaway's representative told Acushnet that Callaway would file suit against Acushnet the next day. Callaway's representative also refused, at this time, to have further dialog with Acushnet and Judge Thyng. Acushnet had already prepared four requests for reexamination and filed them that day.

After Acushnet filed its requests for reexamination, at Acushnet's request, the parties once again met with Magistrate Judge Thyng to try to resolve this dispute. (Nauman Decl. at ¶ 7.) Callaway delayed filing its suit until after the meeting. During the final meeting with Magistrate Judge Thyng, Callaway never indicated that Acushnet's requests for reexamination violated the Agreement. (*Id.*) The next day, Callaway filed suit against Acushnet in the District of Delaware. (Decl. at ¶ 8.) Callaway's complaint discussed Acushnet's requests for reexamination at length. However, Callaway never claimed that Acushnet's requests violated the Agreement. Likewise, Callaway's prior petition to stay the reexamination proceedings nowhere suggested that filing the requests for reexamination was anyway inappropriate.

Clearly, Callaway's newfound claims of breach are insubstantial, last-ditch efforts to avoid the PTO's reconsideration of its dubious patents. To the extent Callaway's claims have

had even disclosed its desire to file the reexamination requests to Mr. McCracken general counsel of Callaway Golf almost two weeks before it filed them. (Nauman Decl. at ¶ 5.)

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any merit (and they do not, as described in further detail herein), Callaway has waived any basis to complain by over three months of inaction.

III. ARGUMENT

A. The Settlement Agreement Does Not, and Cannot, Preclude Reexamination

1. Callaway's Reading of the Purpose Behind M.P.E.P. § 2646 I is Wrong

Initially, Callaway's reading of the M.P.E.P. is unfounded. Section 2646, part I of the M.P.E.P. permits a Patent Owner to petition the Director to vacate an order granting an *inter partes* reexamination as being *ultra vires* or "unauthorized." The M.P.E.P. provides specific examples of when such a petition may be proper. M.P.E.P. § 2646.I. Specifically, the M.P.E.P. provides that such a petition may be proper when:

- (A) the reexamination order is not based on prior art patents or printed publications;
- (B) reexamination is prohibited under 37 CFR § 1.907;
- (C) all claims of the patent were held to be invalid by a final decision of a Federal Court after all appeals;
- (D) reexamination was ordered for the wrong patent;
- (E) reexamination was ordered based on a duplicate copy of the request; or
- (F) the reexamination order was based **wholly** on the same question of patentability raised by the prior art *previously considered* in an earlier concluded examination of the patent by the Office (e.g., the application which matured into the patent, a prior reexamination, an interference proceeding). As to (F), the decision of *In re Recreative Technologies Corp.*, 83 F.3d 1394, 38 USPQ2d 1776 (Fed. Cir. 1996) is to be noted.

M.P.E.P. § 2646 I. This section makes it clear that there are three reasons why the PTO's reexamination order may be *ultra vires*: (1) it violates a portion of the Patent Act (e.g., example (A) would violate §§ 301, 311(a), example (B) would violate at least §§ 315(c), 317, example (E) would violate § 317(a) and example (F) would violate at least § 312); (2) it violates a PTO rule (e.g., example (C) would violate at least 37 C.F.R. 1.913, which requires that the reexamination be

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requested during the period of enforceability of the patent (*see also* M.P.E.P. § 2642 IV.C, *Ethicon v. Quigg*, 849 F.2d 1422 (Fed. Cir. 1988)); and/or (3) the PTO's order granting reexamination issued by mistake (e.g., example (D) shows where the PTO may have issued an order granting reexamination of a patent by mistake). Even with respect to example (D), however, the PTO would lack the statutory authority to order reexamination because it was not requested pursuant to 35 U.S.C. §§ 301 *et seq.*.

Callaway points to no authority—nor is there any—which permits private parties, by agreement, to strip the PTO of its jurisdiction to conduct an *inter partes* reexamination of a patent. When the PTO issued its Order instituting reexamination of this patent, acted well within its authority as granted by Congress and embodied in the Patent Act. According to the M.P.E.P., The Patent Owner must establish that the PTO acted beyond the scope of power allowed or granted by the law (i.e., *ultra vires*). Callaway has made no such showing in its petition filed on April 13, 2006, nor can it, as all of the appropriate statutes and rules have been complied with and there was no mistake in Ordering Reexamination of the '130 patent.

B. Acushnet Has Complied with the Forum Selection Clause of the Agreement

To the extent that the Agreement applies, Acushnet and Callaway have both completed all of the alternative dispute resolution proceedings required under the Agreement. Moreover, when Callaway filed its suit against Acushnet in the United States District Court for the District of Delaware, it complied with the requirement that legal proceedings be brought in that Court. Therefore, the agreement has been complied with and Callaway's petition should be denied.

C. The Agreement is Silent on Reexamination and Should Not be Construed to Prohibit Reexamination

The forum selection clause does not preclude reexamination—an administrative proceeding between the PTO and the Patent Owner. Moreover, there are strong policy reasons why the forum selection clause in the Agreement should not be construed to preclude the instant reexamination proceedings.

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1. Reexamination is an Administrative Proceeding Between the Patent Owner and the PTO

Reexamination is an administrative proceeding where the PTO takes a second look at a patent. The proceedings are similar to an original patent Examination before the PTO and the parties to the proceedings are the PTO and the Patent Owner. *See, e.g.*, 35 U.S.C. §§ 312 (“the *Director* shall determine whether a substantial new questions of patentability ... is raised by the request.”); 313 (“If ... *the Director* finds that a substantial new question of patentability affecting a claim of a patent is raised, the determination shall include an order for *inter partes* reexamination of the patent for resolution of the question”); 314(a) (“reexamination shall be conducted *according to the procedure established for initial examination* under the provisions of sections 132 and 133.”). The primary difference between *ex parte* reexamination and *inter partes* reexamination is that the Third Party Requester will be permitted to file one reply to a PTO Action and the Patent Owner’s reply. *See* 35 U.S.C. § 314(b)(2).

The Federal Courts have distinguished between “administrative proceedings” in the PTO and “legal proceedings” in Federal Court. *See Joy Mfg. Co. v. Nat’l Mine Service Co.*, 810 F.2d 1127, 1130 (Fed. Cir. 1987) (stating that “the district court correctly refused to equate “a *request for administrative reexamination* ... with filing a suit in a United States Court.” (emphasis added).); *Joy Techs., Inc. v. Manbeck*, 959 F.2d 226, 229 (Fed. Cir. 1992) (noting that a reexamination is an “administrative proceeding,” and that there was “no basis” for the plaintiff “to recharacterize the statutory procedure established by Congress in the reexamination statute” to be akin to litigation brought in the Federal Courts.) Moreover, reexamination, an “administrative proceeding,” cannot be filed in United States District Court—either by the Third Party Requester or by the PTO itself. *See Joy Techs.*, 959 F.2d at 229 (noting that the plaintiff

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admitted that the PTO could not bring a declaratory judgment action for patent invalidity in district court.)

In the *Joy Manufacturing* case, the patent owner had filed a motion to enforce a settlement agreement before a District Court. *Joy Mfg.*, 810 F.2d 1127. The patent owner argued that by filing an *ex parte* reexamination request in the PTO, the licensee had violated a settlement agreement.² *Id.* at 1128. The patent owner requested an injunction preventing the third party requester from “further proceeding in the reexamination procedures in the PTO; to withdraw its reexamination requests’ and to retrieve all documents from the PTO.” *Id.* The Court of Appeals for the Federal Circuit concluded that “[t]he settlement agreement by its literal terms [did] not proscribe the conduct of which” the patent owner complained. *Id.* at 1129. Further, in denying the patent owner’s motion, the Federal Circuit stated:

Turning to “patent law,” the district court correctly refused to equate “a request for administrative reexamination ... with filing a suit in a United States Court. Its reliance on *Etter* as support for this legal conclusion was entirely appropriate. The *Etter* decision turned on the precise issue here, namely that reexamination and civil litigation were distinctly different proceedings.

Joy Mfg., 810 F.2d at 1130 (quoting *In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985) (“The intent that reexamination proceedings and court actions involving challenges to validity be distinct and independent is reflected in the legislative history of § 303.”))

In the present situation, the Agreement states that any “legal proceeding” is to be brought in the United States District Court for the District of Delaware. (Agreement, ¶ 19.7.) This clause should not be construed to cover “administrative proceedings,” which are substantially different than “legal proceedings,” as recognized by the Federal Circuit in *Joy Mfg.* and *Etter*. See also *Joy Techs., Inc. v. Manbeck*, 959 F.2d at 229. Reexamination is not between parties to the agreement, cannot be brought in Federal Court and is not precluded by paragraph 19.7 of the

² The agreement in that case stated in pertinent part: “(a) During the term of this Agreement, NATIONAL will not file any suit in any United States Court or any Court in any foreign country challenging or contesting the validity of the Licensed Patents...” *Jof. Mfg.*, 810 F.2d at 1129.

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Agreement. See *Joy Mfg. Co.*, 810 F.2d at 1130; *Joy Techs.*, 959 F.2d at 229. Such administrative proceedings are outside the Agreement and are not prohibited by the forum selection clause in paragraph 19.7.

2. The Agreement Should Not be Interpreted So Expansively as to Preclude Reexamination by the PTO

A strong public policy supports the PTO's duty to cancel claims that are unpatentable. See 35 U.S.C. § 316(a); *Houston Atlas*, 217 U.S.P.Q.2d (BNA) at 1037 (noting that there is an important public interest "in eliminating worthless patents.") The Court of Appeals for the Federal Circuit has recognized that "[w]hen Congress voted the reexamination statute into law, it had before it a voluminous record to the effect that the procedure was an important step forward for the United States patent system and for the public interest that the system is charged to serve." *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 602 (Fed. Cir. 1985). This public interest "lies in having valid patents upheld and invalid patents rendered invalid, and hence patents should be reexamined when a substantial question of patentability is raised." *In re Baker Hughes*, 215 F.3d 1297, 1302 (Fed. Cir. 2000) (emphasis added); see also 37 C.F.R. § 1.555 ("A patent by its very nature is affected with a public interest.") The Federal Circuit has held that "[t]he innate function of the reexamination process is to increase the reliability of the PTO's action in issuing a patent by reexamination of a patent thought 'doubtful.'" *In re Etter*, 756 F.2d at 857.

Callaway's petition is a belated attempt to prevent the PTO from performing its important public function. Even if Callaway's interpretation of the contract were plausible (which it is not), a contractual provision preventing a party from seeking reexamination would probably be void as being contrary to public policy. *Bremen v. Zapata Off-Shore Co.*, 407 U.S. 1 (1972) (concluding that a forum selection clause, while generally enforceable, will not be enforced where it violates the strong public policy of the forum in which suit is brought); *Newton v. Rumery*, 480 U.S. 386, 392 (1987) ("The relevant principle is well established: a promise is

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unenforceable if the interest in its enforcement is outweighed in the circumstances by a public policy harmed by enforcement of the agreement.”); *United Paperworkers Int’l Union v. Misco, Inc.*, 484 U.S. 29, 42 (1987) (“a court may refuse to enforce contracts that violate ... public policy.”); *Suter v. Munich Reinsurance*, 223 F.3d 150 (3d Cir. 2000) (citing *Bremen* for the proposition that federal forum selection clauses should not be enforced where they are contrary to public policy).

Moreover, in *Lear v. Adkins*, the United States Supreme Court determined that prohibiting licensees from challenging the validity of a patent that they had licensed runs afoul of public policy “in permitting full and free competition in the use of ideas which are in reality part of the public domain.” *Lear v. Adkins*, 395 U.S. 653, 670 (1969). Moreover, the Court noted that:

A patent, in the last analysis, simply represents a legal conclusion reached by the Patent Office. Moreover, the legal conclusion is predicated on factors as to which reasonable men can differ widely. Yet the Patent Office is often obliged to reach its decision in an *ex parte* proceeding, without the aid of the arguments which could be advanced by parties interested in proving patent invalidity.

Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification.

Id. By analogy, preventing a Third Party Requester and a potential licensee of the subject patent from requesting reexamination of a patent would be contrary to the public policy embodied in the *Lear v. Adkins* decision.³

³ Moreover, if the Agreement were to be construed as Callaway suddenly believes it should be—Acushnet would have waived its constitutional right to petition the government for the redress of grievances, a right conferred by the First Amendment. *See* U.S. Const. Am. 1. Any such waiver is required to be not only “voluntary but must be knowing, intelligent acts done with sufficient awareness of the relevant circumstances and likely consequences.” *See Brady v. United States*, 397 U.S. 742, 748 (1970); *Fuentes v. Shevin*, 407 U.S. 67, 95 (1971) (“For a waiver of constitutional rights in any context must, at the very least, be clear. We need not concern ourselves with the involuntariness or unintelligence of a waiver when the contractual language relied upon does not, on its face, even amount to a waiver.”) The Agreement does not express any waiver of Acushnet’s right to petition the PTO for the

In re U.S. Patent No. 6,506,130
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Finally, the *inter partes* reexamination statutes did not exist in 1996, when the Agreement raised by Callaway was entered into. (Nauman Decl. at ¶ 2.) Acushnet could not have waived rights that did not even exist at the time. See *In re RFE Indus., Inc.*, 283 F.3d 159 (3rd Cir. 2002).

Therefore, because the Agreement is silent on reexamination, the foregoing reasons all weigh heavily against construing the Agreement so broadly as to preclude reexamination.

IV. CONCLUSION

The Director has already ordered reexamination of the '130 patent. The references that Acushnet applied to the claims of the '130 patent raised substantial new questions of patentability that the PTO has agreed to consider. All of the statutory prerequisites and rules have been satisfied. The Patent Act, embodying important public policy, now requires that this *inter partes* reexamination proceed with "special dispatch" to resolve the substantial new questions of patentability raised by Acushnet's request for reexamination. 35 U.S.C. § 314(c).

Callaway's petition must be **denied** because: (1) it lacks any basis in the Patent Act or PTO Rules; (2) Acushnet has fully complied with the Agreement; and (3) the Agreement does not preclude reexamination of the '130 patent—nor can it be construed to do so.

redress of its grievances. Therefore, any interpretation of the forum selection clause of the Agreement should not preclude Acushnet from seeking reexamination of Callaway's patents.

In re U.S. Patent No. 6,506,130
Control No. **95/000,122**
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Acushnet hereby certifies that a copy of this Opposition has been served on the Patent
Owner at the following address:

Dorothy P. Whelan
Fish & Richardson P.C.
P.O. Box 1022
Minneapolis, MN 55440-1022

Acushnet does not believe that any fees are due in connection with this filing. However, the
U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit
any overpayment, to our Deposit Account No. 08-3038 referencing docket number
00634.0004.RXUS02.

Respectfully submitted,



Dated: April 27, 2006

Alan M. Grimaldi (Reg. No. 26,599)
Joseph P. Lavelle (Reg. No. 31,036)
Andrew R. Sommer (Reg. No. 53,932)
Attorneys for Acushnet Company

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(202) 383-6614 (telephone)
(202) 383-6610 (fax)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: **6,506,130**

Control No.: **95/000,122**

Inventor: Michael J. SULLIVAN

Issued: January 14, 2003

Appl. 09/832,154

Filed: April 10, 2001

Titled: **MULTI LAYER GOLF BALL**

MAIL STOP *Inter Partes* REEXAMINATION

Central Reexamination Unit

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

DECLARATION OF JOSEPH NAUMAN

I, Joseph Nauman, Executive Vice President, Corporate and Legal at the Acushnet Company Fairhaven, Massachusetts, hereby declare as follows:

1. I represent and am Executive Vice President, Corporate and Legal of Acushnet Company ("Acushnet"), located at 333 Bridge Street, Fairhaven, Massachusetts 02719.
2. I negotiated and witnessed the signing of the 1996 Settlement Agreement between Acushnet, Spalding & Evenflo Companies, Inc. and Lisco, Inc. that Callaway discusses in its Petition to Vacate the Reexamination Orders as *Ultra Vires*.
3. Pursuant to Paragraph 19.5 of the Agreement, I was present at a mediation proceeding before David W. Plant between Acushnet and Callaway Golf Company ("Callaway") on August 3, 2005.

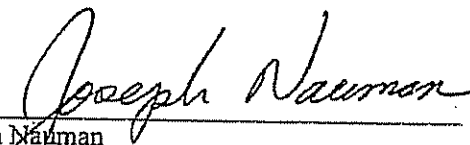
Declaration of Joseph Nauman

Submitted in Support of Acushnet's Opposition to Patent Owner's Petition to Vacate Reexamination Orders as Ultra Vires

Page 2

4. Pursuant to Paragraph 19.6 of the Agreement, I was present at a mediation proceeding before Magistrate Judge Mary Pat Thyng on October 28, 2005.
5. On January 5th and 6th 2006, I met with Mr. Steve McCracken, General Counsel of Callaway to discuss a possible settlement of the dispute between Acushnet and Callaway. During discussions with Mr. McCracken, I informed him that if Callaway were to file suit against Acushnet in Federal Court, Acushnet would request *inter partes* reexamination of Callaway's United States Patent Nos. 6,210,293, 6,503,156, 6,506,130 and 6,595,873. During the course of those discussions, Mr. McCracken proposed reexamination of an Acushnet patent as part of a potential settlement.
6. Mr. McCracken never mentioned to me that any reexamination request would violate the 1996 Settlement Agreement.
7. Acushnet filed its requests for reexamination of Callaway's patents on January 17, 2006. Shortly after filing, the parties agreed to meet with Magistrate Judge Thyng again. This meeting took place on February 8, 2006. I was present at this meeting. During the course of discussions, Callaway's representatives not once suggested that Acushnet's requests for reexamination were prohibited by the 1996 Settlement Agreement.
8. Following the February 8, 2006 meeting, Callaway filed suit against Acushnet in the United States District Court for the District of Delaware as required by the 1996 Settlement Agreement.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Joseph Nauman

April 27, 2006

EXHIBIT J

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: **6,210,293**

Control No.: **95/000,120**

Inventor: Michael J. SULLIVAN

Issued: April 3, 2001

Appl. 09/470,196

Filed: December 21, 1999

Titled: **MULTI-LAYER GOLF BALL**

MAIL STOP *Inter Partes* REEXAMINATION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**ACUSHNET'S OPPOSITION TO PATENT OWNER CALLAWAY'S RENEWED
PETITION TO SUSPEND INTER PARTES REEXAMINATION PROCEEDINGS**

Sir:

Third Party Requestor Acushnet Company ("Acushnet") files this Opposition to Patent Owner Callaway Golf's ("Callaway") Renewed Petition to Suspend Inter Partes Reexamination Proceedings under 37 C.F.R. §§ 1.181, 1.182, 1.183, 1.987 and 35 U.S.C. 314(c). A substantially identical copy of this response is being filed separately in connection with reexamination proceedings on U.S. Patent Nos. 6,503,156 (Control No. 95/000,121), 6,506,130 (Control No. 95/000,122), and 6,595,873 (Control No. 95/000,123).

Callaway has again requested that the Director suspend Acushnet's *inter partes* reexamination request in favor of litigation in an effort to circumvent the Patent Act. Congress enacted the *inter partes* reexamination statutes "to reduce expensive patent litigation in U.S. district courts by giving third-party requesters the option of *inter partes* reexamination proceedings in the PTO." 145 CONG. REC. E1788-02, 1999 WL 593941 (Cong. Rec.) (Aug. 3, 1999). Callaway's petition to suspend is directly contrary to the intent of Congress in enacting

In re U.S. Patent No. 6,210,293
Control No. **95/000,120**
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the reexamination statute. To the extent that Callaway's paper is properly filed under 37 C.F.R. § 1.937,¹ Callaway's petition should be **DENIED**.

PROCEDURAL HISTORY

Acushnet filed the above-identified request for reexamination on January 17, 2006, after its attempts to resolve its dispute with Callaway failed.

On January 18, 2006, with the involvement of United States District Court Magistrate Judge Mary Pat Thyng, the parties agreed to attend a mediation session with Judge Thyng on February 8, 2006.² The mediation failed to produce a settlement. Acushnet then requested the withdrawal of its petition to suspend prosecution. On February 9, 2006, Callaway sued Acushnet for infringement of these patents in the United States District Court for the District of Delaware (C.A. No. 06-91) on February 9, 2006.

On March 21, 2006, Callaway filed a petition with the PTO to suspend the reexamination proceedings. That petition, and Acushnet's opposition to that petition were discarded by the PTO as being "improper papers" before the issuance of the first Office Action in the reexamination proceedings.

On April 13, Callaway, in another attempt to forestall reexamination of its patents, filed a petition that asserted that the PTO lacked the authority to order the present reexamination proceedings. Acushnet opposed that petition on April 27, 2006 noting that Congress clearly vested the PTO with the authority to institute the present reexamination proceedings and that all procedural prerequisites had been satisfied. A decision on that petition is still forthcoming.

¹ On April 11, 2006, the PTO denied Callaway's petition "because it was filed prior to the issuance of the initial Office Action in the reexamination proceeding." (Decisions Discarding Improper Papers at 2, Apr. 10 or 11, 2006.) Each of the Orders Granting Reexamination of Callaway's patents note that an Office Action is forthcoming. Therefore, Callaway has, once again, filed an improper paper and it should be discarded. Callaway's arguments that the PTO's previous decision discarding the petitions was wrong is simply without merit. Moreover, Callaway's citation of 37 C.F.R. § 1.987 is also wrong because that section does not provide *any party* the right to petition the PTO as Callaway seems to allege.

² Despite Acushnet's prior clarification of the facts, Callaway's statements in footnote 2 of Callaway's petition regarding communications between Acushnet and Callaway once again distort the facts. While Acushnet did request that Callaway further mediate with Acushnet, Callaway did not agree to further mediation until after Acushnet's requests for reexamination were filed.

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On April 28, 2006, Callaway filed *yet another petition*, once again requesting suspension of the present reexamination proceedings. In its petition, Callaway asserts that there is good cause for the Director to suspend reexamination of its patents by raising arguments that are merely dilatory. As explained below, Callaway's petition should be denied.

I. THE EQUITABLE DOCTRINE OF ASSIGNOR ESTOPPEL HAS NO BEARING ON THIS PROCEEDING

Callaway's argument that Acushnet is in privity with Callaway is wrong. Far from being in privity, Callaway has sued Acushnet in the United States District Court for the District of Delaware. In the Delaware litigation, Acushnet had pled that the Callaway patents are invalid and unenforceable. Callaway did not move to strike those defenses nor has it otherwise tried to raise the issue of assignor estoppel in the litigation. In fact, if Callaway were to present this argument in Court, Callaway would lose, as the federal courts have rejected Callaway's argument. *See Acushnet Co. v Dunlop-Maxfli Sports Corp.*, Civ. A. No. 98-717-SLR, 2000 U.S. Dist. LEXIS 10123, * 12 (D. Del. Jun. 29, 2000) (discussed *infra*; **Exhibit A**).

Instead, Callaway asks the Director to find privity between Acushnet and Callaway, and to therefore stay the reexamination proceedings. Callaway asserts that because Mr. Sullivan, an inventor on the '293 patent is currently one of 28 Acushnet vice presidents,³ Acushnet cannot challenge the validity of this patent. This position is unfounded.⁴

Acushnet is a part of a large, publicly traded, Fortune 500 company—Acushnet plainly is not the alter ego of Mr. Sullivan. Mr. Sullivan does not control or direct Acushnet. Therefore, Acushnet's hiring of Mr. Sullivan does not preclude Acushnet from challenging the validity of the subject patent. In addition, Mr. Sullivan was not involved with Acushnet's development of

³ Mr. Sullivan's correct title is Vice President Research & Development Product Development. He has held this position since April 1, 2005. Callaway's Petition incorrectly asserts that Mr. Sullivan "is ... the current Acushnet vice president of intellectual property." (Pet. at 6.) Acushnet's previous petition addressed this fact, yet Callaway is apparently unwilling to acknowledge this.

⁴ In fact, in 2002 the previous patent owner permitted Mr. Sullivan's involvement in assessing the strength of Spalding's patent portfolio, including the patents of the subject requests for reexamination—a position seemingly directly at odds with Callaway's estoppel position here.

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the Titleist® Pro V1™ golf balls (the allegedly infringing golf balls)—a factor that almost certainly would prevent the application of assignor estoppel to these facts.⁵

A. Acushnet and Callaway are Not in “Privity”

Callaway cites no authority to support the proposition that the judge-made doctrine of assignor estoppel applies in *inter partes* reexamination proceedings, wherein infringement is not an issue. Acushnet knows of no such authority. However, even if the doctrine of assignor estoppel were to be recognized in *inter partes* proceedings, this is surely not the case for the Director to recognize or apply this doctrine.

Callaway’s arguments that the Director must suspend the *inter partes* reexamination of the above-identified patents because Acushnet hired Mr. Sullivan is obviously over-stated. No party would be able to challenge the validity of a competitor’s patent when they have hired an inventor who worked for that competitor.

In the *Dunlop-Maxfli* case, Federal Judge Robinson in the Delaware Federal District Court recognized that to find a company was in privity with a competitor because the inventor was employed by the competitor would preclude “companies from competing for talented employees.” See *Dunlop-Maxfli Sports*, 2000 U.S. Dist. LEXIS 10123, at* 12.⁶ There, the court concluded that:

Extending the doctrine of assignor estoppel to defendant would punish it for hiring [the inventor of the patent-in-suit] and using his talents to compete with plaintiff. Assignor estoppel was not designed to prevent companies from competing for talented employees; rather it was intended to prevent the assignor (whether acting individually or through another entity) from “making [a] representation [of the patent’s validity] at the time of assignment (to his advantage) and later ... repudiating it (again to his advantage).”

Id. (citing *Diamond Scientific Co. v. Ambico, Inc.*, 848 F.2d 1220, 1224 (Fed. Cir.1988).)

⁵ This presupposes that the meaning of “privies” in Rule 1.913 is a reference to the equitable doctrine of assignor estoppel. Acushnet does not necessarily agree with Callaway’s conflation of this rule with that doctrine.

⁶ Acushnet’s previous petition addressed the *Dunlop* case, which is directly on point and was issued by the same Judge in the same Court where litigation is currently pending. Callaway refuses to acknowledge this authority in an attempt to create issues where there are none.

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Callaway greatly exaggerates Mr. Sullivan's position within Acushnet and his financial stake in Acushnet in its misguided attempt to forestall this reexamination proceeding. Mr. Sullivan is one of **28 Vice Presidents** at Acushnet Company. He is not on the Board of Directors at Acushnet. The 28 Vice Presidents report to at least one of four Senior Vice Presidents, four Executive Vice Presidents, two Presidents, or Acushnet's one Chairman, and ultimately to the Company's shareholders. Redacted versions of Acushnet's organizational charts showing where Mr. Sullivan fits into Acushnet's employment structure are attached as **Exhibit B**. Thus, this case bears substantial similarities with the *Dunlop* case, where Judge Robinson found a lack of privity where:

Defendant is not [the inventor's] corporate disguise. [The Inventor] owns an insignificant number of defendant's shares, he **does not sit on its board of directors**, and he holds **no sway over defendants finances or strategic decisions**. Although [the inventor] is a "Vice President of Research and Development," **the record reveals that there are twenty-six "Vice Presidents" in defendant's organizational structure** and, far from being second command as the title suggests, [the inventor] is subordinate to a "Managing Director of Research and Development."

Dunlop-Maxfli Sports, 200 U.S. Dist. LEXIS 10123 at 11-12 (emphasis added).

Suggesting that Mr. Sullivan is using Acushnet—a company founded in 1910—as his alter ego in connection with this request for reexamination is absurd. There is thus no basis to find that Mr. Sullivan is the alter ego of Acushnet.

B. Mr. Sullivan Was Not Involved With the Design or Production of the Allegedly Infringing Titleist® Pro V1™ Golf Balls

In assessing the applicability of assignor estoppel, the case law requires that the Director look at "the equities dictated by the relationship between the inventor and company B *in light of the act of infringement*." *Shamrock Techs., Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 793 (Fed. Cir. 1990) (emphasis added) (**Exhibit C**); *Mentor Graphics Corp. v. Quickturn Design Systems, Inc.*, 150 F.3d 1374, 1379 (Fed. Cir. 1998) (concluding that assignor estoppel applied because the defendant was "far more than a mere shareholder," and that the relationship between two companies was formed so that the defendant "would have the capacity it needed to manufacture the accused devices and to market them outside of France.") (**Exhibit D**); *see also*

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Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 839 (Fed. Cir. 1991) (“What is significant is whether the ultimate infringer availed itself of the inventor’s “knowledge and assistance” to conduct infringement.”) (**Exhibit E.**)

Callaway’s federal court complaint, attached as **Exhibit F**, alleges that Acushnet’s Titleist® Pro V1™ golf balls have infringed *inter alia*, the ’293 patent since 2000. (**Exhibit F** at ¶ 19.) The Titleist® Pro V1™ golf balls have been available publicly since at least October 11, 2000. (**Exhibit G.**) This product had been in development for years prior to its release. Mr. Sullivan did not start work for Acushnet until after the accused Pro V1™ golf balls were on the market.⁷ Because the Pro V1™ golf ball was released prior to his arrival at Acushnet, Mr. Sullivan had no role in the development of the Titleist® Pro V1™ golf ball. Nor has had any substantial role in the design of those golf balls since joining Acushnet. Thus, Mr. Sullivan’s position at Acushnet in no way implicates the concerns that sometimes give rise to the equitable doctrine of assignor estoppel.

II. CALLAWAY’S OTHER GROUNDS FOR SUSPENDING THE REEXAMINATION PROCEEDINGS ARE CONTRARY TO STRONG PUBLIC POLICY CONSIDERATIONS FAVORING REEXAMINATION OVER LITIGATION

Callaway also contends that because Acushnet has (1) submitted a Rule 1.132 declaration that includes test data in support of Acushnet’s reexamination request and (2) has presented evidence that the claims of the ’293 patent are obvious under 35 U.S.C. § 103, that the reexamination must be suspended for some undisclosed length of time.⁸ If accepted, Callaway’s arguments would lead to the subversion of the *inter partes* reexamination statute—contrary to clear Congressional intent. See 145 Cong. Rec. E1788-02, 1999 WL 593941 (Cong. Rec.) (Aug. 3, 1999) (*inter partes* reexamination is provided as a lower cost method of challenging patent validity when compared to litigation) (**Exhibit H**); *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1428 (Fed. Cir. 1988) (concluding that an argument that the District Court will

⁷ In fact, Mr. Sullivan resigned from Top-Flite Golf on October 31, 1999—prior to the filing date of any of the patents upon which Acushnet now seeks reexamination. In fact, Mr. Sullivan was completely unaware of the applications upon which these patents were based prior to their issuance.

⁸ Presumably Callaway is requesting that the Director suspend the reexamination indefinitely pending the outcome of the later-filed litigation. The litigation is in its earliest stages. An answer has been filed, but the Court has yet to enter a scheduling order and the resolution in Federal Court is likely years away.

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have a more complete record “ignores the advantages of a PTO reexamination,” which is “neutral [because] the patentee and the public hav[e] an equal interest in the issuance and maintenance of valid patents.” (emphasis added) (**Exhibit I**.)

A. The PTO Can Determine the Weight to be Given to Acushnet’s Rule 1.132 Declarations

Callaway’s petition suggests that the PTO cannot effectively evaluate technical evidence submitted in connection with a Rule 1.132 declaration without the assistance of a district court. That the PTO in fact invites such objective evidence is undisputable. *See* M.P.E.P. § 716.01 *et seq.* (giving examples of types of Rule 1.132 declarations that Applicants may submit in connection with arguments for patentability).

Callaway has argued that “[a] full and fair assessment of patentability requires discovery in the form of answers to written requests and deposition testimony to evaluate the accuracy of the testing presented in Acushnet’s declarations....” (Callaway Pet. at 5.) During the prosecution of the subject patent, Callaway submitted declarations without apparent concern for the need for “discovery in the form of answers to written requests and deposition testimony.” Callaway has already acted contrary to this new-found concern.

The PTO is completely capable of evaluating evidence submitted in declarations and nothing prevents Callaway from submitting declarations of their own. To assert that the PTO cannot perform this function without a court’s assistance ignores long-standing PTO practice and procedure, including Callaway’s own behavior before the PTO in acquiring the very patent at issue. Thus, Callaway’s petition should be denied.

B. Neither Callaway nor the PTO Need the District Court to Develop Evidence of Any Alleged Commercial Success

Callaway has represented to both a Federal Court and to the PTO that the alleged invention claimed in the ’293 patent is commercially successful. For example, in its Complaint against Acushnet, Callaway asserted that it and the Top-Flite Golf Company “have both had success selling golf balls embodying” the ’293 patent. (**Exhibit F** at ¶ 16.) Moreover, in connection with U.S. Patent Application No. 08/070,585, a parent application to the ’293 patent, then patent

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owner Top-Flite submitted extensive evidence relating to alleged commercial success.⁹ (**Exhibit J**).

Now to avoid a hearing before this expert tribunal in the course of a procedure expressly provided by Congress, Callaway suddenly asserts that without the additional discovery, the PTO will not be able to make a “full and fair evaluation of patentability.” (Pet. at 6.) Callaway, by its own conduct, including evidence that was previously submitted to the PTO during the course of obtaining this very patent has relied on the PTO to evaluate the significance of commercial success evidence in evaluating patentability.¹⁰

The PTO has been and continues to be fully capable of assessing the strength of commercial success evidence in weighing its import on the question of obviousness and nothing prevents Callaway from submitting a Rule 1.132 declaration in support of its commercial success arguments. Simply because the PTO may need to evaluate evidence of commercial success, does not mean that this *inter partes* reexamination proceeding need be suspended. Thus, Callaway’s petition should be denied.

Conclusion

Callaway’s petition must be denied as contrary to clear Congressional intent and as an attempt to subvert the Patent Act. For the reasons discussed above, each of Callaway’s arguments fail to rise to the level of establishing “good cause” to suspend the *inter partes* reexamination proceedings. Thus, Acushnet respectfully requests that the Director **deny** Callaway’s petition.

⁹ Once again, although Callaway had been presented with this argument before, Callaway has no answer to why, when procuring its patent, the PTO was capable of considering its alleged commercial success and now, in reexamination, the PTO is incapable of deciding the issue of commercial success without the assistance of a District Court.

¹⁰ Similar evidence supporting an allegation of commercial success was submitted by then patent owner Spalding/Top-Flite Golf Company in a number of applications in this patent family. *See, e.g.*, Appeal Brief filed Aug. 22, 2001 at 12 (U.S. Pat. App. No. 08/714,661) (section entitled “The Significant Commercial Success of the Claimed Golf Ball Warrants Reversal of the Examiner’s Rejection of Claims 1 and 14-32 as Being Obvious.”)

In re U.S. Patent No. 6,210,293
Control No. **95/000,120**
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Acushnet hereby certifies that a copy of this Opposition has been served on the Patent Owner at the following address:

Dorothy P. Whelan
Fish & Richardson P.C.
P.O. Box 1022
Minneapolis, MN 55440-1022

Acushnet does not believe that any fees are due in connection with this filing. However, the U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 08-3038 referencing docket number **00634.0004.RXUS01**.

Dated: May 5, 2006

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alan M. Grimaldi', with a long horizontal line extending to the right.

Alan M. Grimaldi (Reg. No. 26,599)
Joseph P. Lavelle (Reg. No. 31,036)
Andrew R. Sommer (Reg. No. 53,932)
Attorneys for Acushnet Company

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EXHIBIT K

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CALLAWAY GOLF COMPANY,)	
)	
Plaintiff,)	C.A. No. 06-91 (SLR)
V.)	
)	
ACUSHNET COMPANY,)	JURY TRIAL DEMANDED
)	
Defendant.)	

**ACUSHNET COMPANY’S ANSWER TO CALLAWAY’S COMPLAINT
AND DEMAND FOR JURY TRIAL**

Defendant Acushnet Company (“Acushnet”), files this Answer in response to the Complaint and Demand for Jury Trial (“Complaint”) of Callaway Golf Company (“Callaway”), and states in numbered paragraphs corresponding to the numbered paragraphs of the Complaint, as follows:

ANSWER

PARTIES

1. Plaintiff Callaway Golf Company (“Callaway Golf”) is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business in Carlsbad, California.

ANSWER: Acushnet lacks information sufficient to form a belief as to the truth of the allegations in paragraph 1 and therefore denies them.

2. Callaway Golf is the parent company of the Top-Flite Golf Company (“Top-Flite”), which is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business in Chicopee, Massachusetts.

ANSWER: Acushnet lacks information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 2 and therefore denies the same.

3. Defendant Acushnet Company ("Acushnet"), upon information and belief, is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business in Fairhaven, Massachusetts.

ANSWER: Acushnet admits the allegations in paragraph 3.

4. Acushnet, upon information and belief, is a wholly-owned operating company of Fortune Brands, Inc. ("Fortune Brands").

ANSWER: Acushnet admits the allegations in paragraph 4.

5. Fortune Brands, upon information and belief, is a publicly-traded corporation organized and existing under the laws of the State of Delaware, having a principal place of business in Lincolnshire, Illinois.

ANSWER: Acushnet admits that Fortune Brands is a publicly-traded corporation organized and existing under the laws of the State of Delaware, otherwise denied.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

ANSWER: Acushnet admits that plaintiff purports to invoke the jurisdiction of this Court under Sections 1331 and 1338(a) of Title 28 of the United States Code. Further answering, Acushnet states that this Court should stay the exercise of any jurisdiction it possesses in favor of the first-filed *inter partes* reexamination requests pending before the United States Patent and Trademark Office involving the same parties and the same patents.

7. Acushnet is subject to personal jurisdiction in this District because, upon information and belief, Acushnet is a Delaware corporation and is doing and has done substantial business in this District, including business relating to the sale and distribution of the infringing products as described below.

ANSWER: Acushnet admits that it is subject to personal jurisdiction in this District because Acushnet is a Delaware corporation and is doing and has done business in this District, including business related to the sale and distribution for sale of golf balls, otherwise the allegations of paragraph 7 are denied.

8. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b).

ANSWER: Acushnet admits the allegations in paragraph 8.

9. Callaway Golf is the owner, by assignment, of United States Patent Nos. 6,210,293, 6,503,156, 6,506,130 and 6,595,873 (the "'293, '156, '130, and '873 patents, respectively).

ANSWER: Acushnet admits that assignments for the '293, '156, '130, and '873 patents were recorded by the United States Patent and Trademark Office on September 26, 2003 and that Callaway Golf asserts that Callaway Golf is the owner by assignment of the '293, '156, '130, and '873 patents, otherwise, Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 9 and therefore denies the same.

BACKGROUND

10. In 2003, Callaway Golf acquired the intellectual property assets of Top-Flite's predecessor-in-interest, then also known as "The Top-Flite Golf Company," and before that as "Spalding Sports Worldwide, Inc."

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 10 and therefore denies the same.

11. Among the assets Callaway Golf acquired was a family of patents that cover a unique blend of materials and properties for golf balls (collectively "the Sullivan patents").

ANSWER: Denied.

12. The Sullivan patents disclose technological breakthroughs relating to golf ball construction, particularly the use of a polyurethane cover on a multi-layer solid core golf ball, resulting in performance that had previously eluded in the industry.

ANSWER: Denied.

13. The Sullivan patents include, but are not limited to, the '293, '156, '130 and '873 patents.

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 13 and therefore denies the same.

14. The technology claimed in the Sullivan patents revolutionized the game of golf. In fact, within two years of introduction, the vast majority of professional golfers on the PGA Tour had switched from older golf ball constructions to those incorporating the claimed technology. Some commentators have noted that the technology in the Sullivan patents has done more to change the game of golf than any other equipment advance in the history of the game.

ANSWER: Denied.

15. Golf balls with the patented technology offer superior performance, including longer distance, better feel, and improved wear resistance compared to prior art golf balls.

ANSWER: Denied.

16. Callaway Golf and Top-Flite have both had success in selling golf balls embodying this technology, including the Callaway Golf® Rule 35®, CTU 30 and Callaway Golf® HX® series of golf balls, the Ben Hogan® series of golf balls, and the Strata® Tour Ace™, Strata® Tour Premier™ and Top-Flite® Strata® TL-Tour™ lines of golf balls.

ANSWER: Acushnet admits that the above mentioned balls were offered in the market. Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 16 and therefore denies the same.

17. Acushnet makes and sells golf balls under the Titleist® brand.

ANSWER: Acushnet admits the allegations in paragraph 17.

18. Among these balls are the Titleist Pro V1®, Titleist Pro V1x™, and Titleist Pro V1*™ (collectively “the Pro V1 balls”).

ANSWER: Acushnet admits that the Titleist Pro V1®, Titleist Pro V1x™, and Titleist Pro V1*™ are Titleist products and that Acushnet makes and sells the Titleist Pro V1® and Titleist Pro V1x™ golf balls, otherwise Acushnet denies the allegations of paragraph 18.

19. Acushnet has had great success selling the Pro V1 balls. Acushnet has sold almost a billion dollars worth of Pro V1 balls since 2000 by incorporating the technology disclosed in the Sullivan patents. Based upon publicly available data, Callaway Golf estimates that Acushnet continues to sell Pro V1 balls at a rate in excess of \$200 million per year.

ANSWER: Acushnet admits that it has sold the Titleist Pro V1 golf balls. Acushnet denies the remaining allegations of this paragraph.

20. Acushnet touts the Pro V1 balls as the best selling golf balls of all time, and as “The #1 Ball in Golf.”

ANSWER: Acushnet is the owner of the trademark “The #1 Ball in Golf,” and has used that trademark in selling its Titleist brand golf balls. In fact, Acushnet sought registration of this trademark in 1988 and has been using it in connection with the sale of Titleist golf balls for over 15 years. Otherwise, Acushnet is without information or

knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 20 and therefore denies the same.

21. The Pro V1 balls embody the technology of the Sullivan patents, and in particular, embody one or more claims of each of the '293, '156, '130 and '873 patents.

ANSWER: The allegations in paragraph 21 are vague and ambiguous and therefore Acushnet denies the same.

22. Acushnet has no credible defense to Callaway Golf's infringement claims. Instead, realizing that Callaway Golf was prepared to enforce its rights, Acushnet preemptively filed a request for re-examination of the Sullivan patents with the United States Patent and Trademark Office ("PTO"). In that request, Acushnet claims that prior art already disclosed or discussed by Top-Flite in the applications that matured into the Sullivan patents somehow presents new issues of patentability. Moreover, the prior art Acushnet now claims raises new issues of patentability for the Sullivan patents is the same art that Acushnet dismissed in its own arguments to the PTO when it was belatedly seeking a patent on virtually the same technology—almost four years after the first Sullivan application was filed.

ANSWER: Denied. Further answering, Acushnet admits that it filed requests for *inter partes* reexamination of the '293, '156, '130 and '873 patents in the United States Patent and Trademark Office ("PTO"). All of the requests were filed before this action and pose substantial new questions of patentability not previously considered by the PTO. As soon as all requests for reexamination have been granted by the PTO, Acushnet intends to ask this Court to stay this proceeding in favor of the earlier filed *inter partes* proceeding in the PTO.

COUNT I—INFRINGEMENT OF THE '293 PATENT

23. Callaway Golf incorporates and realleges the allegations of paragraphs 1 through 22 as if fully set forth herein.

ANSWER: Acushnet incorporates herein and realleges its answers to paragraphs 1-22.

24. Callaway Golf is the owner by assignment of United States Patent No. 6,210,293, entitled "Multi-layer golf ball" ("the '293 patent"), which was duly and legally issued by the United States Patent and Trademark Office on April 3, 2001. A copy of the '293 patent is attached as Exhibit A to this Complaint.

ANSWER: Acushnet admits that a copy of the '293 patent is attached as Exhibit A to the complaint and the '293 Patent was issued by the United States Patent and Trademark Office on April 3, 2001 and is entitled "Multi-layer Golf Ball," otherwise, Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 24 and therefore denies the same.

25. Acushnet has infringed and both induced and contributed to infringement of one or more claims of the '293 patent by making, using, selling and/or offering to sell infringing golf balls, including without limitation its Pro V1 balls.

ANSWER: Denied.

26. Acushnet has and has had actual notice of the '293 patent.

ANSWER: Denied. Further answering, Acushnet admits that over four years ago, the prior owner of the '293 patent called this patent to Acushnet's attention, but never brought suit and appeared to abandon its contention.

27. Acushnet has and has had constructive notice of the '293 patent pursuant to 35 U.S.C. § 287(a).

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 27 and therefore denies the same.

28. Acushnet's infringement of the '293 patent has been and continues to be willful.

ANSWER: Denied.

COUNT II – INFRINGEMENT OF THE '156 PATENT

29. Callaway Golf incorporates and realleges the allegations of paragraphs 1 through 22 as if fully set forth herein.

ANSWER: Acushnet incorporates herein and realleges its answers to paragraphs 1-22.

30. Callaway Golf is the owner by assignment of United States Patent No. 6,503,156 B1, entitled "Golf ball having multi-layer cover with unique outer cover characteristics" ("the '156 patent"), which was duly and legally issued by the United States Patent and Trademark Office on January 7, 2003. A copy of the '156 patent is attached as Exhibit B to this Complaint.

ANSWER: Acushnet admits that a copy of the '156 patent is attached as Exhibit B to the Complaint and the '156 patent was issued by the United States Patent and Trademark Office on January 7, 2003 and is entitled "Golf ball having multi-layer cover with unique outer cover characteristics," otherwise Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 30 and therefore denies the same.

31. Acushnet has infringed and both induced and contributed to the infringement of one or more claims of the '156 patent by making, using, selling and/or offering to sell infringing golf balls, including without limitation its Pro V1 balls.

ANSWER: Denied.

32. Acushnet has and has had actual notice of the '156 patent.

ANSWER: Denied. Further answering, Acushnet admits that over four years ago, the prior owner of the '156 patent called another patent in this patent family to Acushnet's attention but never brought suit and appeared to abandon its contention.

33. Acushnet has and has had constructive notice of the '156 patent pursuant to 35 U.S.C. § 287(a).

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 33 and therefore denies the same.

34. Acushnet's infringement of the '156 patent has been and continues to be willful.

ANSWER: Denied.

COUNT III – INFRINGEMENT OF THE '130 PATENT

35. Callaway Golf incorporates and realleges the allegations of paragraphs 1 through 22 as if fully set forth herein.

ANSWER: Acushnet incorporates herein and realleges its answers to paragraphs 1-22.

36. Callaway Golf is the owner by assignment of United States Patent No. 6,506,130 B2, entitled "Multi-layer golf ball" ("the '130 patent"), which was duly and legally issued by the United States Patent and Trademark Office on January 14, 2003. A copy of the '130 patent is attached as Exhibit C to this Complaint.

ANSWER: Acushnet admits that a copy of the '130 patent is attached as Exhibit C to the Complaint and the '130 patent was issued by the United States Patent and Trademark Office on January 14, 2003 and is entitled "Multi-layer golf ball," otherwise Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 36 and therefore denies the same.

37. Acushnet has infringed and both induced and contributed to the infringement of one or more claims of the '130 patent by making, using, selling and/or offering to sell infringing golf balls, including without limitation its Pro V1 balls.

ANSWER: Denied.

38. Acushnet has and has had actual notice of the '130 patent.

ANSWER: Denied. Further answering, Acushnet admits that over four years ago, the prior owner of the '130 patent called another patent in this patent family to Acushnet's attention but never brought suit and appeared to abandon its contention.

39. Acushnet has and has had constructive notice of the '130 patent pursuant to 35 U.S.C. § 287(a).

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 39 and therefore denies the same.

40. Acushnet's infringement of the '130 patent has been and continues to be willful.

ANSWER: Denied.

COUNT IV – INFRINGEMENT OF THE '873 PATENT

41. Callaway Golf incorporates and realleges the allegations of paragraphs 1 through 22 as if fully set forth herein.

ANSWER: Acushnet incorporates herein and realleges its answers to paragraphs 1-22.

42. Callaway golf is the owner by assignment of United States Patent No. 6,595,873 B2, entitled "Multi-layer golf ball" ("the '873 patent"), which was duly and legally issued by the United States Patent and Trademark Office on July 22, 2003. A copy of the '873 patent is attached as Exhibit D to this Complaint.

ANSWER: Acushnet admits that a copy of the '873 patent is attached as Exhibit D to the Complaint, that the United States Patent and Trademark Office issued the '873 Patent on July 22, 2003 and that the '873 patent is entitled "Multi-layer golf ball," otherwise Acushnet is without information or knowledge sufficient to form a belief as to the truth of the remaining allegations in paragraph 42 and therefore denies the same.

43. Acushnet has infringed and both induced and contributed to the infringement of the '873 patent by making, using, selling and/or offering to sell infringing golf balls, including without limitation its Pro V1 balls.

ANSWER: Denied.

44. Acushnet has and has had actual notice of the '873 patent.

ANSWER: Denied. Further answering, Acushnet admits that over four years ago, the prior owner of the '873 patent called another patent in this patent family to Acushnet's attention but never brought suit and appeared to abandon its contention.

45. Acushnet has and has had constructive notice of the '873 patent pursuant to 35 U.S.C. § 287(a).

ANSWER: Acushnet is without information or knowledge sufficient to form a belief as to the truth of the allegations in paragraph 45 and therefore denies the same.

46. Acushnet's infringement of the '873 patent has been and continues to be willful.

ANSWER: Denied.

FIRST DEFENSE
(Failure to State a Claim)

47. The Complaint fails to state a claim on which relief can be granted.

SECOND DEFENSE
(Non-Infringement)

48. Acushnet does not infringe, has not infringed, and does not and has not induced or contributed to infringement of any valid claim of the '293, '156, '130, or '873 patents ("patents-in-suit").

THIRD DEFENSE
(Invalidity Under 35 U.S.C. §§ 101 *et seq.*)

49. Each claim of the patents-in-suit is invalid for failure to comply with one or more provisions of the Patent Act (35 U.S.C. §§ 101 *et seq.*).

**FOURTH DEFENSE
(Inequitable Conduct)**

50. Each of the patents-in-suit are unenforceable because of material misrepresentations made to the PTO.

51. Each of the patents-in-suit claim priority back to United States Patent Application No. 08/870,585 filed on June 6, 1997 ("the '585 Application").

52. The first office action issued in connection with the '585 Application included a rejection of all claims as being obvious under 35 U.S.C. § 103 over United States Patent No. 5,314,187 to James R. Proudfit ("Proudfit"). This office action was mailed by the PTO on July 8, 1998.

53. Despite attempts to distinguish the pending claims from the Proudfit patent, the PTO issued a final rejection on December 21, 1998 in which it maintained that the claims were unpatentable over Proudfit.

54. Upon information and belief, on April 9, 1999 patent examiner Graham and patentee's counsel, Brian Bembenick held a personal interview at the PTO and discussed Proudfit. Upon information and belief, Mr. Bembenick convinced the Examiner that if a persuasive declaration under 37 C.F.R. § 1.131 was submitted to antedate or swear behind Proudfit in United States Patent Application No. 08/926,246 ("the '246 Application"), that declaration should be persuasive in the '585 Application.

55. In the Appeal Brief filed in the USPTO on September 20, 1999, patentee's counsel Mr. Klein argued that the rejection to Proudfit was improper. Specifically, Mr. Klein told the Patent Office that:

More importantly, Appellant has submitted evidence in the form of a Declaration under 37 C.F.R. 1.131 (copy attached hereto as Attachment A) in a related application (U.S. Serial No. 08/926,246) which removes

Proudfit ('187) patent as prior art by antedating the Proudfit ('187) patent. This Declaration has been held by the Examiner in the copending 08/926,246 application (who is the same Examiner in the present application) to be effective for antedating Proudfit ('187). Moreover, in an interview conducted on April 9, 1999, the Examiner indicated that such a Declaration, even though not timely in the present application would be entered if it was found persuasive in the copending 08/926,246 application (see Interview Summary Record of April 9, 1999).

(Appeal Br. Filed Sep. 20, 1999 at 6.)

56. Following the submission of the aforementioned Rule 1.131 declaration, the Examiner withdrew the rejection of the claims over the Proudfit patent.

57. Upon information and belief, the claims of the '585 Application were not entitled to the same filing date as the claims of the '246 Application. Therefore, Proudfit was and continues to be prior art to the claims of the '585 Application under 35 U.S.C. § 102(b). Section 715 of the Manual of Patent Examination Procedure prohibits the use of a declaration to antedate a reference that qualifies as prior art under § 102(b). Therefore, Proudfit could not have been properly antedated by a declaration.

58. In fact, Acushnet has requested that the patents-in-suit be reexamined and that the Proudfit patent be applied to each of the claims of the patents in suit because Proudfit renders each claim invalid under one or more sections of the Patent Act.

59. Upon information and belief, Mr. Klein and/or Mr. Bembenick and/or other attorneys at the law firm of Fay, Sharpe, Fagan, Minnich & McKee, LLP were familiar with the family of patents to which the patents-in-suit belong. Upon information and belief, Mr. Klein and/or Mr. Bembenick and/or other attorneys at the law firm of Fay, Sharpe, Fagan, Minnich & McKee, LLP knew or should have known that Proudfit could not be properly antedated, but still submitted the declaration of Michael Sullivan in an attempt to deceive the PTO. This deception resulted in the withdrawal of a prior art rejection.

60. Because each of the patents-in-suit appear to claim priority to the '585 Application, each of the patents in suit is unenforceable because of the intentional submission of an improper Rule 1.131 declaration.

**FIFTH DEFENSE
(Unclean Hands)**

61. Callaway Golf is not entitled to any relief in this action because it has come to this court with unclean hands.

**SIXTH DEFENSE
(Waiver/Laches)**

62. Callaway Golf's claims are barred by at least one of the equitable doctrines of waiver and/or laches.

**SEVENTH DEFENSE
(Estoppel/Stay of Litigation)**

63. On January 17, 2006 Acushnet filed requests with the USPTO seeking the reexamination of each of the patents-in-suit under 35 U.S.C. § 301 *et seq.*

64. The inter partes reexamination proceedings permitted under title 35 are "intended to reduce expensive patent litigation in U.S. district courts by giving third-party requesters, in addition to the existing ex parte reexamination in Chapter 30 of title 35, the option of interpartes reexamination proceedings in the PTO." (145 Cong. Rec. S14696-03 (Nov. 17, 1999).)

65. Callaway brought this suit against Acushnet knowing Acushnet had requested that the PTO reevaluate the validity of these patents in light of numerous facts that were not before the patent Examiner during the original prosecution of the patents-in-suit.

66. Despite knowing of Acushnet's invalidity contentions and the possibility of the patents-in-suit being rendered invalid by the PTO, Callaway Golf brought suit in this Court.

67. Callaway Golf should be barred from pursuing its claims under the equitable doctrine of estoppel until the substantial new questions of patentability raised in the four requests for reexamination filed by Acushnet have been resolved by the PTO. Therefore, pursuant to 35 U.S.C. § 318, this Court should stay this litigation until the PTO has passed upon the issues raised in the requests for reexamination in order to serve the interests of justice.

PRAYER FOR RELIEF

Wherefore, Acushnet prays for a judgment as follows:

1. That Callaway take nothing and be granted no relief;
2. That Callaway's alleged claims for relief, and each of them, be dismissed with prejudice;
3. That Acushnet be awarded its attorneys' fees pursuant to 35 U.S.C. § 285 by reason of Callaway's misconduct causing this to be an "exceptional case";
4. That Acushnet be awarded its costs; and
5. That Acushnet be awarded such other and further relief as the Court deems just and proper.

Respectfully submitted,

OF COUNSEL:

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Dated: March 1, 2006

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Attorneys for Defendant

721845

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

CERTIFICATE OF SERVICE

I, David E. Moore, hereby certify that on March 1, 2006, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification of such filing(s) to the following and the document is available for viewing and downloading from CM/ECF.

Thomas L. Halkowski
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I hereby certify that on March 1, 2006, I have Electronically Mailed the documents to the following non-registered participants:

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EXHIBIT L

SETTLEMENT AGREEMENT

Parties: SPALDING & EVENFLO COMPANIES, INC.
LISCO, INC.
ACUSHNET COMPANY

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SETTLEMENT AGREEMENT

between

SPALDING & EVENFLO COMPANIES, INC., a Delaware corporation, for itself and on behalf of its Spalding Sports Worldwide Division, with principal offices in Tampa, Florida;

-and-

LISCO INC., a Delaware corporation and wholly owned subsidiary of said SPALDING & EVENFLO COMPANIES, INC. (hereinafter jointly and severally referred to as "Spalding");

-and-

ACUSHNET COMPANY, a Delaware corporation, (hereinafter "Acushnet"), with principal offices in Fairhaven, Massachusetts.

WHEREAS:

A. Spalding and Acushnet are parties to a Settlement Agreement dated November 15, 1990, which, for its term of ten (10) years, in situations of patent infringement, requires them, prior to filing suit, to first notify each other of adverse patent claims, and seek a non-litigious resolution thereof, including non-binding mediation, if necessary;

B. Spalding asserted that the manufacture and sale by Acushnet of Titleist DT 90, Titleist DT 100 and Pinnacle Performance golf balls infringed Lisco Inc.'s U.S. Patent No. 5,329,959 for "Golf Ball Cover Compositions" (the "'959 Patent") and; additionally, that the manufacture and sale by Acushnet of Super Pinnacle Plus golf balls infringed Lisco Inc.'s U.S. Patent No.

5,368,304 for "Low Spin Golf Ball" (the "'304 Patent"), which assertions were denied by Acushnet;

C. Acushnet asserted that Spalding's 1995 print advertisements mentioning Acushnet golf balls were actionably false, inaccurate, disparaging and unfair and those assertions were denied by Spalding;

D. Spalding filed two patent infringement actions (Civil Actions Nos. 95-CV-366 and 95-CV-640) against Acushnet in the United States District Court for the Northern District of Ohio respectively alleging infringement of its '959 Patent through the manufacture and sale of Titleist DT 90, Titleist DT 100 and Pinnacle Performance golf balls and infringement of its '304 Patent through the sale *inter alia* of Super Pinnacle Plus golf balls, and filed another action (Civil Action No. 95-CV-387) seeking a declaration that certain of its 1995 print advertisements were not actionably false, inaccurate, disparaging or unfair and asserting that 1995 Acushnet print advertisements mentioning Spalding golf balls were actionably false, inaccurate, disparaging and unfair, which assertions have been denied by Acushnet;

E. Acushnet filed a declaratory judgement action against the '959 and '304 Patents in the District Court of Massachusetts (95-CV-10384) and also therein brought an action (95-CV-10376) alleging *inter alia* false advertising and breach of contract by Spalding;

F. Acushnet's Massachusetts' actions were transferred to the United States District Court for the Northern District of Ohio and all of said actions have now been transferred from said court to the U.S. District Court of Delaware, whose jurisdiction the parties accept; and

G. The parties desire to: (i) settle their present disputes relating to the manufacture, sale and advertising of golf balls as aforesaid; (ii) avoid other and similar patent disputes; and (iii) strengthen the procedure for attempting to resolve expeditiously such new intellectual property and advertising disputes as may arise between them.

NOW, THEREFORE, the parties agree as follows:

1. DEFINITIONS

In this Settlement Agreement, the following terms shall have the meanings indicated:

1.1 Golf Balls: Balls for use in playing, practicing or simulating the game of golf.

1.2 Golf Ball Business: The business of and the technology used in making, using and selling golf balls in the United States and foreign countries as participated in by the parties, their affiliates, subsidiaries or related companies.

1.3 Spalding's '959 Patent Rights: The domestic and foreign patents and applications therefor identified as A-1 on Exhibit A, including without limitation any and all divisionals, continuations, continuations in part applications currently filed and foreign counterparts thereof or applications currently filed which otherwise emanate from the same roots as do the listed patents, whether or not they can be viewed as improvements thereof.

1.4 Spalding's '304 Patent Rights: The domestic and foreign patents and applications therefor identified as A-2 on Exhibit A, including without limitation any and all divisionals, continuations, continuations in part applications currently filed and foreign counterparts thereof or applications currently filed which otherwise emanate from the same roots as do the listed patents, whether or not they can be viewed as improvements thereof.

1.5 High Acid Ionomeric Resin: Resin comprised of an alpha olefin and an alpha, beta ethylenically unsaturated carboxylic acid, wherein the latter comprises greater than 16% (by weight) of the total weight of the resin.

1.6 High Acid Patent Rights: Any and all foreign or domestic patents or applications: (1) currently issued or on file and identified as A-3 on Exhibit A; or (2) filed by any of the parties within three years of the Effective Date of this Settlement Agreement, directed to an invention relating to Golf Balls which invention includes in at least one independent claim a cover composition which comprises one or more High Acid Ionomeric Resin(s). However, such High Acid Patent Rights do not include, either implicitly or explicitly, (a) other patented technology claimed alone; or (b) separately patentable technology claimed in combination with a High Acid Ionomeric Resin; or (c) any patented multilayer golf ball technology, except to the extent such technologies in (a), (b), and (c) preceding are included in Spalding's '304 Patent Rights.

1.7 Spalding's Patent Rights: The Patent Rights defined in items 1.3, 1.4 and as applicable in 1.6.

1.8 Disclosure Group: The senior management of either party, a major stockholder of either party, and the management of any parent of a party, their counsel and auditors who need to know of the terms and conditions of this Settlement Agreement, or any of them.

1.9 Third Party: Any corporation, company, entity or individual not in the Disclosure Group.

1.10 Net Sales: The invoice price less any sales taxes or freight charges paid by the seller and any discounts given to the buyer.

2. '959 PATENT RIGHTS' LICENSE

2.1 In consideration of the one time payment by Acushnet to Spalding of the sum of US\$ 535,000.00, Spalding agrees to, and does hereby grant Acushnet, its subsidiaries and affiliates, an irrevocable, non-exclusive, paid up, non-transferrable (except to any successor(s) of substantially all of the assets of Acushnet's Golf Ball Business) license under Spalding's '959 Patent Rights to make, use, offer to sell, sell and import Golf Balls under all claims thereof.

2.2 Acushnet expressly does not waive its right to contest, nor is it estopped from contesting, the validity, enforceability or non-infringement of the Spalding '959 Patent Rights, nor does it concede or otherwise acknowledge the validity, enforceability or non-infringement thereof or of any of them, and Spalding agrees never to assert such waiver or estoppel by reason of this Settlement Agreement.

3. '304 PATENT RIGHTS' LICENSE

3.1 In consideration of the one time payment by Acushnet to Spalding of the sum of US\$ 100,000.00, Spalding agrees to and does hereby grant Acushnet, its subsidiaries and affiliates, an irrevocable, non-exclusive, paid up, non-transferrable (except to any successor(s) of substantially all of the assets of Acushnet's Golf Ball Business) license under Spalding's '304 Patent Rights to make, use, offer to sell, sell and import Golf Balls under all claims thereof, provided the average diameter of such Golf Balls is less than 1.70 inches.

3.2 Acushnet expressly does not waive its right to contest nor is it estopped from contesting the validity, enforceability or non-infringement of the Spalding '304 Patent Rights, nor does it concede or otherwise acknowledge the validity, enforceability or non-infringement thereof or of any of them and Spalding agrees never to assert such waiver or estoppel by reason of this Settlement Agreement.

3.3 Spalding agrees to and does hereby grant Acushnet, its subsidiaries and affiliates, an irrevocable, non-exclusive, non-transferable (except to any successor(s) of substantially all assets of Acushnet's Golf Ball Business) license under Spalding's '304 Patent Rights to make, use, offer to sell, sell and import Golf Balls under all claims thereof, the average diameter of such Golf Balls being 1.70 inches or more under all claims thereof, in consideration of the payment to Spalding by Acushnet of a royalty which shall be the greater of (a) or (b):

- a) a percentage of the Net Sales of Golf Balls sold by Acushnet after the Effective Date of the Settlement Agreement, applicable as follows:

0-500,000 dozen 5%

500,001-1,000,000 dozen 4%

1,000,001-2,000,000 dozen 3%

over 2,000,000 dozen 2%; or

- b) \$100,000 for each complete calendar year or, if for a period less than a complete calendar year, a pro rata share of \$100,000.00.

Such royalty shall be paid quarterly in payments made not later than thirty (30) days following the close of the quarters ending in March, June, September and December in which the sales occurred.

4. HIGH ACID PATENT RIGHTS' LICENSE

4.1 Each party agrees to and does hereby grant to the other, its subsidiaries and affiliates, an irrevocable, non-exclusive, non-transferrable (except to any successor(s) of substantially all of the assets of its Golf Ball Business) license under its High Acid Patent Rights to make, use, offer to sell, sell and import Golf Balls under all claims thereof, subject only to the payment of a single three percent (3%) royalty on the Net Sales of its Golf Balls falling within the issued claims of said High Acid Patent Rights.

4.2 Both parties expressly do not agree to waive their rights to contest nor are they estopped by this license from contesting the validity, enforceability or non-infringement of the High Acid Patent Rights held by the other, nor do they acknowledge the validity thereof.

5. MULTIPLE LICENSES AND ROYALTIES

5.1 For any particular Golf Ball model, at most one royalty rate shall apply, as set forth in item 3.3 or 4.1, even though more than one license, as set forth in items 2.1, 3.1, 3.3 and 4.1, may apply.

5.2 For any Golf Ball model containing High Acid Ionomeric Resin which is covered by any '959 Patent Right which also qualifies as a High Acid Patent Right, the license provided in item 2.1 shall control to the exclusion of the royalty rates set forth in items 3.3 and 4.1.

5.3 For any Golf Ball model containing High Acid Ionomeric Resin which is covered by any '304 Patent Right which also qualifies as a High Acid Patent Right, the following royalties shall apply:

- a) the royalty rate set forth in item 3.3 shall control to the exclusion of the royalty rate set forth in item 4.1 for Golf Balls with an average diameter of 1.70 inches or greater; and
- b) the royalty rate set forth in item 4.1 shall control to the exclusion of the license set forth in item 3.1 for Golf Balls with an average diameter of less than 1.70 inches.

6. SETTLEMENT OF ADVERTISING CLAIMS

6.1 Spalding has discontinued and agrees not to resume publication of the advertisements attached hereto as Exhibit E and will pay to Acushnet in full settlement of Acushnet's alleged damages' claims arising out of Spalding's 1995 advertising campaign using such advertisements the sum of US\$ 400,000.00.

6.2 Acushnet has discontinued and agrees not to resume publication of the advertisements attached hereto as Exhibit F and will pay to Spalding in full settlement of Spalding's alleged damages claims arising out of Acushnet's 1995 comparative advertising campaign using such advertisements the sum of US\$ 100,000.00.

6.3 The parties agree: (i) to utilize demonstrably accurate characterizations when mentioning competing brands of each other by name in the advertising of Golf Balls; and (ii) to recite the methodology being employed, establishing comparisons used in comparative advertising. It is understood and agreed that nothing herein shall prohibit or prevent either party from accurate and fair comparative advertising.

6.4 This Settlement does not constitute an admission of the inaccuracy, truth or falsity of the contested advertisements by either party.

6.5 Spalding agrees to avoid statements for the next fifteen (15) years which might imply that Z-Balata is natural balata (i.e., Z-Balata is longer than other balata balls) and to use Z-Balata always in combination and in the context of a 2-piece construction, and not "balata" alone as in the phrase "balata ball." Moreover, Spalding agrees to avoid in its advertisements phraseology which implies that a golf ball sold under the trademark "Z-balata" is a balata golf ball, such as the phraseology: "Z-balata and other balata balls." However, Spalding, with proper substantiation, is entitled to indicate that its "Z-Balata" golf balls have "balata like" characteristics or possess "balata feel".

6.6 Acushnet agrees to withdraw its opposition to Trademark Application Serial No. 74/513,523 at the United States Patent and Trademark Office (Opposition No. 99000) without prejudice and Spalding agrees to consent thereto.

7. WAIVER

The parties agree to and do hereby waive any damages for past infringement of any of their respective rights, as well as any damages for unfair competition, except as specified herein.

8. PAYMENT, COSTS AND FEES

8.1 Acushnet, within five (5) business days of receipt of the signed original of this Settlement Agreement, shall pay to Spalding by check: the sum of U.S.\$ 335,000.00, being the net amount currently due Spalding as a result of this Settlement Agreement.

8.2 The parties agree to be responsible for their own costs and legal fees arising out of any presently pending litigation between them which relates to the Golf Ball Business and the implementation of this Settlement Agreement.

9. DISMISSAL OF CURRENT ACTIONS

9.1 Concurrent with the execution of this Settlement Agreement, the parties shall take such steps as are necessary to terminate promptly, in accordance herewith, all litigation pending between them which relates to the Golf Ball Business.

9.2 Such steps shall, without limitation, include termination of the following:

9.2.1 Civil Action No. 96-73 MMS, United States District Court for the District of Delaware by Stipulation of Dismissal as annexed in Exhibit B or as otherwise may be required by the court.

9.2.2 Civil Action No. 96-78 MMS, United States District Court for the District of Delaware by Stipulation of Dismissal as annexed in Exhibit C or as otherwise may be required by the court.

9.2.3 Opposition No. 99000 at the United States Trademark and Patent Office, Trademark Trial and Appeal Board, by Stipulation of Dismissal as annexed in Exhibit D.

9.3 Upon execution of this Settlement Agreement by both parties:

9.3.1 Spalding's counsel and Acushnet's counsel shall sign and file the Stipulations of Dismissal described in 9.2.1 and 9.2.2 as set forth in Exhibits B and C;

9.3.2 Spalding's counsel and Acushnet's counsel shall sign a Stipulation of Dismissal as described in 9.2.3 as set forth in Exhibit D.

10. DISCLOSURE OF APPLICATIONS

10.1 Within thirty (30) days of the Effective Date of the Settlement Agreement both parties simultaneously shall exchange any and all pending applications which fall within the scope of the patent rights defined in items 1.6-1.7.

10.2 Both parties agree to exchange any and all applications filed after the Effective Date of the Settlement Agreement which fall within the scope of the patent rights defined in items 1.6-1.7 not later than thirty (30) days after the filing date of any such application.

10.3 Each party agrees to hold the existence and contents of the other's applications subject to items 10.1-10.2 in confidence while such information is not available to the public and to limit the disclosure of such information during that period to the Disclosure Group and Third Parties who are full-time employees of either party.

11. EFFECT OF AGREEMENT

This Settlement Agreement is intended by the parties, and each of them, to settle fully and compromise the disputes hereinbefore mentioned.

12. CONFIDENTIALITY AND PUBLIC ANNOUNCEMENT

12.1 All terms and conditions of this Settlement Agreement shall be held in confidence for a period of five years and may be disclosed during such period only to the Disclosure Group or, with respect only to identification of the licensed patents, persons within the employ of a party who would be benefitted by such knowledge provided, however, that the parties may disclose the terms of this Settlement Agreement when relevant, subject to an appropriate protective order. In such case, however, each party shall seek to restrict by motion or otherwise, disclosure of this Settlement Agreement to the least number of persons who need to know.

12.2 No public announcement concerning this Settlement shall be made by either party except that the litigation has been resolved amicably.

12.3 Notice of a claimed breach of this confidentiality provision shall be in writing and addressed to:

If Spalding is alleged to have breached:

Mr. Scott Creelman
Senior Vice President and
General Manager - Golf Products Worldwide
Spalding Sports Worldwide
425 Meadow Street
P.O. Box 901
Chicopee, Massachusetts 01021

with a copy to:

Robert K. Adikes, Esq.
Vice President & General Counsel
Spalding & Evenflo Companies, Inc.
P.O. Box 30101
Tampa, Florida 33630

If Acushnet is alleged to have breached:

Mr. Walter Uihlein
President and Chief Operating Officer
Acushnet Company
333 Bridge Street
Fairhaven, Massachusetts 02719

with a copy to:

Gilbert L. Klemann, II, Esq.
Senior Vice President & General Counsel
American Brands, Inc.
1700 East Putnam Avenue
Old Greenwich, Connecticut 06870

and shall in good faith identify the suspected breaching party and/or persons. Upon the dispatch of a claim under this Section 12.3, the party alleging the breach may release such

confidential information as it deems necessary to counter the alleged breach and mitigate damage to itself or competitive advantage to the alleged breaching party.

12.4 The foregoing notwithstanding, nothing herein shall release any party or counsel of their obligations under any protective order entered in the litigations settled hereby and all claims, causes of action, damages and remedies are reserved by the parties for any breach of such protective orders.

13. NON-ADMISSION

The agreement of the parties to the terms of this Settlement Agreement is not an admission of the truth of any allegations made by one against the other nor of any liability to each other. Acushnet does not admit the validity or enforceability of the Spalding Patent Rights nor the allegation that any of its previously manufactured Golf Balls infringed such rights, nor the validity of the allegations made by Spalding concerning the falsity of Acushnet's advertising. Further the agreement of Spalding to the terms of this Settlement Agreement is not an admission of any of the allegations made by Acushnet against Spalding nor of any liability by Spalding to Acushnet.

14. SUPERSESSION

This Settlement Agreement embodies the entire understanding of the parties with respect to the matters mentioned and supersedes all prior written or oral understandings or communications with regard to such matters, with the exception of Sections 1-10 and 12-15 of the November 15, 1990 Settlement Agreement.

15. SUCCESSORS

This Settlement Agreement is binding upon the parties hereto, their affiliated, related and controlled companies, as well as their representatives and the successors, transferees and assigns of substantially all of their respective Golf Ball Businesses.

16. EXPIRATION

This Settlement Agreement shall expire upon the expiration of the last to expire patent subject of this Settlement Agreement.

17. EFFECTIVE DATE

This Settlement Agreement is effective the date of execution by the last party to execute it.

18. GOVERNING LAW

This Settlement Agreement shall be governed by the laws of the State of Delaware without reference to conflicts of law, except where the law of the United States is controlling.

19. DISPUTE RESOLUTION

19.1 Any dispute arising out of or relating to patents, including the above mentioned patents, other intellectual property owned or controlled by the parties, or claims relating to advertising shall be resolved in accordance with the procedures specified in this Section, which shall be the sole and exclusive procedure for the resolution of any such disputes.

19.2 The parties shall attempt in good faith to resolve any dispute arising out of or relating to this Settlement Agreement promptly by negotiation between executives who have authority to settle the controversy and who are at higher level of management than the persons with direct responsibility for administration of this Settlement Agreement. Any party may give the other party written notice of any dispute not resolved in the normal course of business. Within 15 days after delivery of the notice, the receiving party shall submit to the other a written response. The notice and the response shall include: (a) a statement of each party's position and a summary of arguments supporting that position, and (b) the name and title of the executive who will represent that party and of any other person who will accompany the executive. Within 30 days after delivery of the disputing party's notice, the executives of both parties shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to attempt to resolve the dispute. All reasonable requests for information made by one party to the other will be honored.

19.3 If the matter has not been resolved by these persons within 45 days of the disputing party's notice, the dispute shall be referred to more senior executives of both parties who have authority to settle the dispute and who shall likewise meet to attempt to resolve the dispute.

19.4 All negotiations pursuant to item 19.2 and 19.3 are confidential and shall be treated as compromise and settlement negotiations for purposes of applicable rules of evidence.

19.5 If the dispute has not been resolved by negotiation within 45 days of the disputing party's notice, or if the parties fail to meet within 30 days, the parties shall endeavor to settle the dispute by non-binding mediation under the then current CPR Model Mediation

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Procedure for Business Disputes in effect on the Effective Date of this Settlement Agreement. Unless otherwise agreed, the parties will select a mediator from the CPR Panels of Neutrals and shall notify CPR to initiate the selection process.

19.6 If the parties fail to achieve acceptable resolution of the dispute at conclusion of the foregoing steps, the dispute shall be referred to Magistrate Judge Mary Pat Trostle or, in the event Magistrate Judge Trostle is unavailable, another judge with authority to mediate disputes within the United States District Court for the District of Delaware.

19.7 At the conclusion of a referral to the Magistrate or other judge as set forth in 19.6, should the dispute remain unresolved, either party may initiate legal proceedings but only in the United States District Court for the District of Delaware, and no other. Said court retains jurisdiction of the parties for such purposes.

IN WITNESS WHEREOF, the parties through their duly authorized agents, have executed this Settlement Agreement.

Place: Tampa, FL

Date: 7-31-96

Witness: Kevin A. Thomas

SPALDING & EVENFLO COMPANIES, INC.

By: [Signature]

Its: President

Place: Tampa, FL

Date: 7/31/96

Witness: Douglas R. Bell

LISCO, INC.

By: [Signature]

Its: V.P. Treasurer

Place: Fairhaven, MA

Date: 8-5-96

Witness: Joseph J. Newman

ACUSHNET COMPANY

By: [Signature]

Its: President

Exhibit A*Copy***SETTLEMENT AGREEMENT**

between

SPALDING & EVENFLO COMPANIES, INC.,
a Delaware corporation,
for itself and on behalf of its Spalding Sports Worldwide Division,
with principal offices in Tampa, Florida;

-and-

LISCO INC.,
a Delaware corporation
and wholly owned subsidiary of said **SPALDING & EVENFLO COMPANIES, INC.**
(hereinafter jointly and severally referred to as "Spalding");

-and-

ACUSHNET COMPANY,
a Delaware corporation,
(hereinafter "Acushnet"),
with principal offices in Fairhaven, Massachusetts.

EXHIBIT A2Spalding's '304 Patent Rights1. Patents.

U.S. Patent No. 5,368,304

2. Applications.

U.S. Application Serial No. 240,259; filed May 10, 1994

U.S. Application Serial No. 255,442; filed June 6, 1994

U.S. Application Serial No. 331,018; filed October 28, 1994

3. Foreign Applications.

Great Britain:	Patent Application No. 9407471.3, filed April 15, 1994
Canada:	Patent Application No. 2,116,510, filed February 25, 1994
Australia:	Patent Application No. 57,506/94, filed March 3, 1994
Japan:	Patent Application No. 111,680/94, filed April 28, 1994
Taiwan:	Patent Application No. 83102820, filed March 31, 1994
Thailand:	Patent Application No. 022167, filed April 19, 1994
Korea:	Patent Application No. 5054/94, filed March 15, 1994

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EXHIBIT A3I. Spalding's U.S. Patents and Applications Relating to High Acid Ionomers

U.S. Patent Application Serial No. 776,803, filed October 15, 1991
(abandoned in favor of U.S. Patent Application Serial No. 596,690, filed
February 5, 1996).

U.S. Patent Application Serial No. 264,997, filed June 24, 1994.

U.S. Patent Application Serial No. 901,680, filed on June 19, 1992
(abandoned in favor of U.S. Patent Application Serial No. 601,380, filed on
February 14, 1996).

U.S. Patent Application Serial No. 493,089, filed June 21, 1995.

U.S. Patent Application Serial No. 649,050, filed May 16, 1996.

U.S. Patent Application Serial No. 412,051, filed March 28, 1995.

U.S. Patent Application Serial No. 070,510, filed June 1, 1993
(abandoned in favor of U.S. Patent Application Serial No. 562,540, filed
November 20, 1995).

U.S. Patent Application Serial No. 225,442, filed June 8, 1994.

U.S. Patent Application Serial No. 359,620, filed December 22, 1994 and
issued on August 6, 1996 as U.S. Patent No. 5,542,677.

U.S. Patent Application Serial No. 551,254, filed on October 31, 1995.

U.S. Patent Application Serial No. 681,870, filed on July 29, 1996.

U.S. Patent Application Serial No. 661,608, filed on June 11, 1996.

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2. Spalding's Foreign Patents and Applications Relating to High Acid Ionomers

Corresponding to U.S. Patent Application Serial No. 776,803:

Australia:	25299/92, filed September 23, 1992
Canada:	2,078,842, filed September 23, 1992
Japan:	301,614/92, filed October 15, 1992
Great Britain:	9221416.2, filed October 13, 1992

Corresponding to U.S. Patent Application Serial No. 901,660:

Australia:	32032/93, filed January 27, 1993
Canada:	2,088,140, filed January 26, 1993
Japan:	170,960/93, filed June 18, 1993
Korea:	4037/93, filed March 17, 1993
Taiwan:	82100909, filed February 10, 1993
Thailand:	018925, filed May 10, 1993
Great Britain:	9304805.6, filed March 3, 1993

Corresponding to U.S. Patent Application Serial No. 070,510

Japan:	12,239/94, filed January 11, 1994
Great Britain:	9400790.3, filed January 17, 1994

Corresponding to U.S. Patent Application Serial No. 054,406:

Great Britain:	9407471.3, filed April 15, 1994
Canada:	2,116,510, filed February 25, 1994
Australia:	57,506/94, filed March 3, 1994
Japan:	111,680/94, filed April 28, 1994
Taiwan:	83102820, filed March 31, 1994
Thailand:	022167, filed April 19, 1994
Korea:	5054/94, filed March 15, 1994

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Exhibit B

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

EXHIBIT B

SPALDING & EVENFLO COMPANIES, INC.
and
LISCO, INC.,

Plaintiffs,

v.

ACUSHNET COMPANY
and
AMERICAN BRANDS, INC.,

Defendants.

Civil Action No. 96-73-MMS

Aug 31 4 22 PM '96

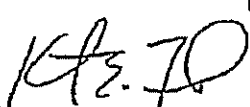
FILED

STIPULATION OF DISMISSAL

Pursuant to 41(a)(1)(ii) of the Federal Rules of Civil Procedure and a Settlement Agreement of August 5, 1996, the terms of which are incorporated herein by reference, the parties to the above action stipulate and agree that all claims in the action, including both the complaint and all counterclaims, be, and hereby are, dismissed with prejudice, and that each party shall bear its own costs and attorneys' fees.

The parties also stipulate and agree that the court shall retain jurisdiction to resolve any and all disputes arising out of the Settlement Agreement in accordance with the terms of the Settlement Agreement.

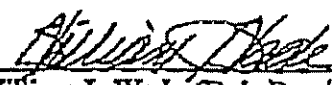
STIPULATED AND AGREED THIS 9th day of AUGUST, 1996.


Kenneth E. Fink, Esq. (Del. Bar #2388)
FERRY, JOSEPH & FINK
824 Market Street, Suite 904
P.O. Box 1351
Wilmington, Delaware 19899
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Attorneys for Spalding & Evenflo
Companies, Inc. and Lisco, Inc.

Of Counsel:

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Attorneys for Acushnet Company

Of Counsel:

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Rory J. Radding
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PENNIE & EDMONDS
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New York, New York 10036
(212) 790-9090

Exhibit C

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

EXHIBIT C

ACUSHNET COMPANY

Plaintiff,

v.

SPALDING & EVENFLO COMPANIES, INC.
and
LISCO, INC.,

Defendants.

Civil Action No. 96-78-MMS

Aug 9 4 23 PM '96
U.S. District Court
District of Delaware

FILED

STIPULATION OF DISMISSAL

Pursuant to 41(a)(1)(ii) of the Federal Rules of Civil Procedure and a Settlement Agreement of August 5, 1996, the terms of which are incorporated herein by reference, the parties to the above action stipulate and agree that all claims in the action, including both the complaint and all counterclaims, be, and hereby are, dismissed with prejudice, and that each party shall bear its own costs and attorneys' fees.

The parties also stipulate and agree that the court shall retain jurisdiction to resolve any and all disputes arising out of the Settlement Agreement in accordance with the terms of the Settlement Agreement.

EXHIBIT A1

Spalding's '959 Patent Rights

1. Patents.

U.S. Patent No. 5,329,959

2. Applications.

(no foreign filings)

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STIPULATED AND AGREED THIS 9th day of AUGUST, 1996.

Kenneth E. Fink

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Exhibit D

Final two entries in the 96-73 case (Spalding v. Acushnet):

08/09/1996	80	STIPULATION of dismissal with prejudice; each party shall bear its own costs and attorneys' fees (copy to MMS) (ds) (Entered: 08/12/1996)
08/09/1996		Case closed (ds) (Entered: 08/12/1996)

Final two entries in the 96-78 case (Acushnet v. Spalding):

08/09/1996	37	STIPULATION of dismissal with prejudice; each party shall bear its own costs and attorneys' fees (copy to MMS) (ds) (Entered: 08/12/1996)
08/09/1996		Case closed (ds) (Entered: 08/12/1996)